Amateur Radio

Volume 81
Number 1 & 2
January/February 2013
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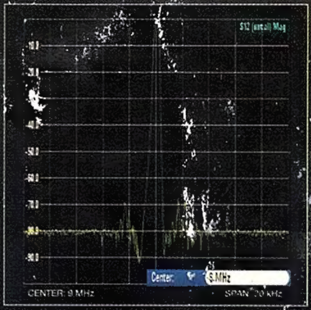

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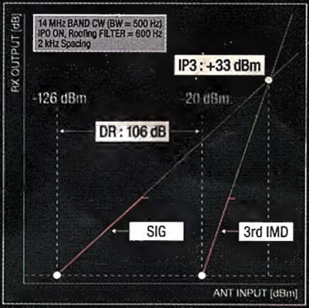

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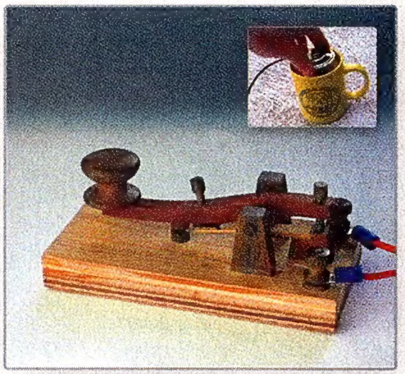

This month's cover
The handmade timber Morse key by Bob Crowe VK6CG. See his brief description on page 6. Photo by Bob Crowe VK6CG. Inset: A simple audio filter to aid CW reception by Peter Parker VK3YE.

Contributions to Amateur Radio

Amateur Radio is a forum for WIA members' amateur radio experiments, experiences, opinions and news. Manuscripts with drawings and/or photos are welcome and will be considered for publication. Articles attached to email are especially welcome. The WIA cannot be responsible for loss or damage to any material. Information on house style is available from the Editor.

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Editorial

Peter Freeman VK3PF

A New Year present

A happy New Year to all. I trust that you had a safe festive season and that the hot weather has not caused you any problems.

As you will have heard on the WIA News broadcasts, and as noted in the News column in this issue, the ACMA has given us all a New Year present in the form of amendments to the amateur Licence Conditions Determination (LCD). Advanced licensees were the major beneficiaries, with the release of the new secondary allocation in the Low Frequency 630 metre band – 472 kHz to 479 kHz. The other changes were mainly to do with bringing the LCD up to date with other changes previously announced, including the formal withdrawal of 420-430 MHz.

I note that several operators have already been using the 630 metre band. I understand that there are few VK2 operators, three in VK1, a couple in VK3 and one in VK4 and an enthusiastic SWL in VK7. The amateurs in VK1 have been discussing the challenges in radiating their transmitted signal: with a wavelength of 630 metres, virtually all amateurs will be using electrically very short antennas which will have low efficiency.

On the VHF side of things, amateurs have been discussing the continuing restrictions on operations in the eastern states in the 50-52 MHz segment, now that the last of the Channel 0 television transmitters have closed. I suspect that nothing will happen in the short term and that we will need to await the outcome of the investigations into the "Digital Dividend" – the reallocation of spectrum vacated by the analogue TV transmitters following the switch over to digital TV.

Summits On The Air

The Christmas New Year period saw several VK3 operators out and about on hilltops for SOTA. I combined a trip to the northeast of Victoria to visit my family for the festive season with several SOTA activations. As a result, I have now passed the 250 point mark for activations. Wayne VK3WAM undertook a multiday bushwalk in the Victorian Alps and reached the 500 Activator point landmark in early January and will be moving toward Mountain Goat status (1000 points). Three Victorian amateurs have passed the 500 point Chaser landmark and are well on the way to Shack Sloth status (1000 points).

January 1 was a busy day. SOTA activators can only claim points for a summit once per calendar year, whilst chasers can claim points once per UTC day for each summit. As the UTC New Year occurred at 1100 local time in Victoria and other eastern states on daylight savings time, several activators planned to "double dip" by being on a summit either side of the change of UTC year and thus gain the summit points twice, once for 2012 and then for 2013. 40 metres was busy with three stations active on summits. Three stations also activated other summits later in the day. There were many chasers around, which made for interesting

Continued on page 5

WIA comment

Phil Wait VK2ASD

Changes at the WIA

Firstly, I hope you all had a great Christmas holiday period. I certainly did, spending New Year's Eve on Sydney Harbour, as I have for the last 20 or so years – the only problem is that as skipper I can't drink too much, but I did manage to get a couple of 40 metre contacts in from the Barrett 550 marine radio.

In the first WIA broadcast for 2013, and in this President's Comment, I want to tell you something about the plans we have for this year. There are some significant changes afoot which we hope will improve the WIA member experience.

Recently the WIA has suffered a fall in revenue due mainly to a drop-off in the number of new licensees, and the general economic conditions affecting sales to members and revenue from advertising. At the same time costs have been increasing – the WIA is the same as everyone in that respect.

The financial situation is certainly not serious, as the WIA has significant reserves, but it is something which needs to be addressed. It would be easy to simply jack up the membership fees to cover the shortfall, but in the present economic climate and with such a large proportion of the WIA membership retired and living on fixed incomes, that doesn't seem like a good first option.

Another problem we have is that too few volunteers do too much work, and in recent times the demands on some key volunteers has been unrealistic. We need to find a way to get more skilled volunteers involved in the operation of the WIA, and in a way that it doesn't become a burden for them.

The WIA's advocacy role with the ITU, the IARU and the ACMA, is probably the most important work we do, but that work is often behind the scenes and goes largely unnoticed. We need to provide more tangible membership benefits, and we need to improve the information flow to members so they know what the WIA is doing, and also so the WIA better knows what its members want.

In summary we need to improve the finances, reduce the work load on WIA volunteers, and improve the general member experience.

The WIA Board has decided to introduce two new initiatives which it hopes will go a long way to addressing those issues.

Firstly, during 2013 we are introducing a new 'cloud' based membership management system called MEMNET.

A "cloud" based system is one where, for a monthly charge to the WIA, the entire office information system is provided by an outside company as a service over the internet. It frees the WIA and its volunteers from having to develop, maintain and upgrade the WIA computer information systems, but it has many other advantages as well.

With MEMNET, you will log into a member's-only section on the WIA website to update your contact details including your particular interests in amateur radio, to purchase items at a members discount, and to pay membership fees.

You will know that your personal information is up to date because you will control it, and if you have registered your specific interests in amateur radio you can receive targeted emails alerting you to upcoming events, WIA news releases, technical information, or information about new products and services.

The MEMNET Membership Management System is also expected to offer significant administration efficiencies. Margaret, who currently works part-time at the WIA office, is retiring early in 2013 and, with the introduction of MEMNET, that position will not be renewed.

By saving one part-time office position, MEMNET is expected to be cost-neutral in the first year of operation and then offer significant cost savings to the WIA in following years.

Naturally a change like this is probably going to have some speed-bumps along the way; some members may not have the internet and some may still prefer more personal contact with the office. Those members will still be able to call the office and speak to Dianne or Mal, but things will certainly be a lot quicker and more convenient using the internet.

Look out for more information about the MEMNET system, and how to set up your user profile, in the coming months. You can find out more about the MEMNET system by going to *www.MEMNET.com.au*

Continued on page 5

WIA news

LCD amended – the new 630 metre band is now a reality

ACMA has amended the Amateur Licence Conditions Determination (LCD) and the new 630 metre band is now a reality.

Effective from the 1st January 2013, Australian Advanced amateur licensees can now operate in the new band (630 metres) on a secondary basis. This new world wide allocation from 472 kHz to 479 kHz is an outcome of the ITU World Radio Conference in 2012 (WRC-12). The ACMA has amended the conditions in the LCD that gives effect to the WRC outcomes authorising a radiated power of not more than 5 watts pX EIRP, with a maximum emission bandwidth of 2.1 kHz. There is however two exclusion zones where amateur operation is not permitted so as to protect aeronautical non-directional beacons (NDB) operating in the Exmouth and Timor regions.

Also included in the amendments is the withdrawal for general use by Advanced licensees to the amateur secondary allocation, 420 to 430 MHz to allow for greater harmonisation of government services in the 400 MHz band, following the ACMA's review of this band. The use of this segment by amateurs was mainly for fixed links associated with repeater interlinking and a number of ATV channels where alternative channel assignment have been achieved in the 430 to 450 MHz 70 cm band.

A copy of the amendments and an explanatory statement can be found by following the link from the WIA website.

2013 Australian Scout Jamboree

The 2013 Australian Scout Jamboree began in the first week of January in Maryborough, Queensland, in the Fraser Coast region, a few hours North of Brisbane.

By sometime on the 2nd January, some 10,000 Scouts and 2,000 adults will have attended the opening ceremony in front of a large stage that would do justice to any big rock band.

During the Jamboree, the Scouts will have participated in a multitude of on and off site activities that challenged their abilities and wits, and taught them new skills and experiences. One of the on-site activities that Scouts can choose to attend is the amateur radio activity. There was a 4-bay radio shack and other activities to occupy Scouts. Amateur radio has had a long association with Scouts, and is present at most Scout Jamborees around the world.

The radio station was being conducted by the Maryborough Electronics Radio Group (MERG) and the Victorian Scout Radio & Electronics Service Unit. The Scout Association has obtained a special event callsign, VI4ASJ (Australian Scout Jamboree) became operational on 1st January and operated through to 13th January. The WIA supported the event by providing access to the QSL Bureau.

Editor's note: I am sure that we will have a more detailed report from AJ2013 in a future issue of AR.

In search of an AR7

Members of the Lake Boga Lions Club have established a Museum at Lake Boga on the site of the No 1 Flying Boat Repair Depot that was established back in 1942.

Members might like to take a moment to visit their website and get a feel for the 30 years of effort that has gone into the establishment of the Museum. Museum volunteers are currently looking for help locating two AR7 radio receivers to complete the restoration of the original communications bunker.

If you can help, the please contact Ross Pfeiffer from the museum by email *museum@flyingboat.org.au*

Bush fires

Major fires in south-east Tasmania, which began on the first Friday of January, continue to burn fanned by relentless hot and windy weather as this issue was being prepared. WICEN Tasmania (South) Secretary, Roger Nichols VK7ARN said operators were at the Incident Management Team headquarters coordinating the fires on the Tasman Peninsula and in the Derwent Valley.

There they helped to run the Tasmanian Fire Service communications using its 80 MHz system, a communications role in which they are trained. Roger VK7ARN said there had been power and communications outages caused by the blazes. Crews are working in safe areas to restore power and communications, although he said WICEN had offered to link the Eaglehawk Neck and Port Arthur areas.

A search for possible victims has already involved 250 properties. More than 100 properties, including houses and a school, have been destroyed. Access to the wild fire affected areas continues to be restricted, as more hot and windy days are forecast with the major fires out of control. Victorian fire fighters are now in Tasmania to help with the fires.

As this report was being prepared, there were many fires reported in Victoria and New South Wales, with many areas under total fire bans given the extreme fire weather conditions expected.

LTE Trial in Midland Western Australia Ends

The ACMA has advised the WIA that the 700 MHz LTE trial in Midland Western Australia has now ended.

Editorial

Continued from page 2

times for those on summits – it was almost like contest operations at times.

A team of operators is working towards the collation of a list of qualifying summits for VK2 and the work has commenced in VK7. With VK3 and VK5 up and running, and VK1 in the final stages of approval, only VK4, VK6 and VK8 have not commenced the tasks required to become active in the worldwide SOTA movement. Anyone can Chase (work an operator on a SOTA summit), but to activate a summit, the summit must be checked that it meets the criteria before being listed on the official database.

Anyone interested in SOTA can do a web search to find much more information. There is plenty of discussion on the Yahoo group SOTA Australia, which would be a good place to start for those in VK. Also look back at the article by Ron VK3AFW in the August 2012 issue of *AR*.

Many SOTA Activators and Chasers will be meeting at the Centre Victoria RadioFest, as well as manning an information table. Be sure to drop by if you wish to learn more.

Welcome James VK4TJF

As we were starting to collate this issue, a draft Contest column arrived from James Fleming VK4TJF. You will be able to read James' contribution in this edition. As time was short, I have largely left his contribution as supplied to us, as noted at the end of the column. James is now up to speed as to our production deadlines and promises to have a more relevant contribution ready for the March issue.

Welcome to the team James. I am sure that readers will appreciate your contributions.

Until next month, keep safe.

Cheers,

Peter VK3PF

WIA comment

Continued from page 3

The second initiative will need to wait until March because I've now run out of space, but in addition to overhauling the administration system, the WIA Board is looking at ways to reduce the workload on volunteers by encouraging more members to participate in the workings of the WIA.

I will have more to say about that in my next Comment, but you will see we are already looking for an Assistant Treasurer to assist John Longayroux VK3PZ in looking after the financial affairs of the Institute.

So, there is lot's happening at the WIA in 2013. Much of it is about housekeeping at this stage, but out of it will come better member services, a better membership experience, and more reasons for people to join the WIA.

Phil Wait VK2ASD
President

WIA news

Continued from page 3

This means that Advanced Amateur licence holders that were within the exclusion zone can now apply to the ACMA for a variation to their existing licences to operate up to 1 kW on the primary HF bands during the trial period. More information on how to apply can be found on the WIA website.

ACMA announces high power trial assessment

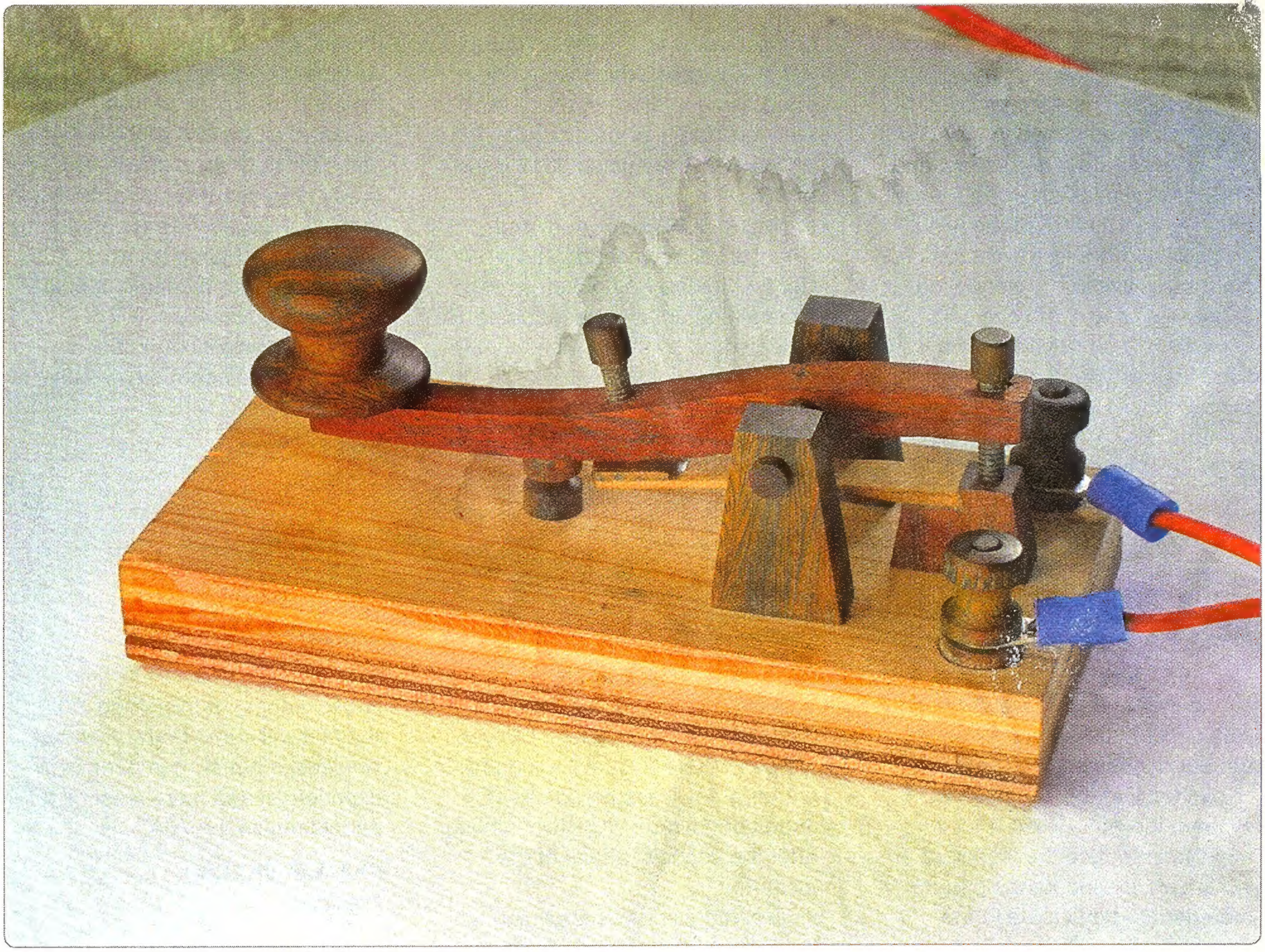
ACMA has announced assessment of the use of higher transmitter output power by amateur Advanced licensees. The ACMA recently met with the WIA to advise how it is going to assess the trial of the use of higher transmitter output power by Advanced licensees, commencing early in 2013.

The ACMA's assessment process will begin with desk-based audits to assess licensee's compliance with their electromagnetic energy (EME) obligations. Advanced licensees authorised to use higher power are to be contacted by mail from the start of February 2013 and asked to provide relevant documentation. This may be followed up with an on-site audit by the ACMA.

Further information about the audit - including a supporting FAQ - and broader assessment of the trial will be available on the ACMA website early in 2013.

A key with a difference

Bob Crowe VK6CG – vk6cg@hotmail.com



The timber key, second prize winner at the NCRG 2012 Hamfest. Photo by VK6CG.

Tis a humble thing but 'tis mine own. I thought you may like to have a quick look at my creation.

Being somewhat pressed for time, I knocked up this on-off switch using scraps of wood that were at hand, just for the NCRG 2012 Hamfest. Yes, all those threads are 5/32" Whitworth (3.97 mm). I was very pleasantly surprised to find how well lignum vitae holds threads. The beam is of jarrah, simply because there was a scrap of the thickness I wanted. It feels quite OK to use (VK6VZ tried it) and is now connected to my TS-50.

How does it work? I'll leave you guessing (for the moment). The contacts are lignum vitae, no metal near them.

At the Hamfest, the key was connected to a code practice oscillator - the 'Morse Mutt Sonic Sounder', a vaguely canine shape with a 1/4 wave acoustic resonator, basically a short PVC tube with 6 cm speaker and really simple circuit from an ARRL book.

Plan ahead

John Moyle Field Day Contest 16 - 17 March

Cheaply improving Morse DX reception

Peter Parker VK3YE

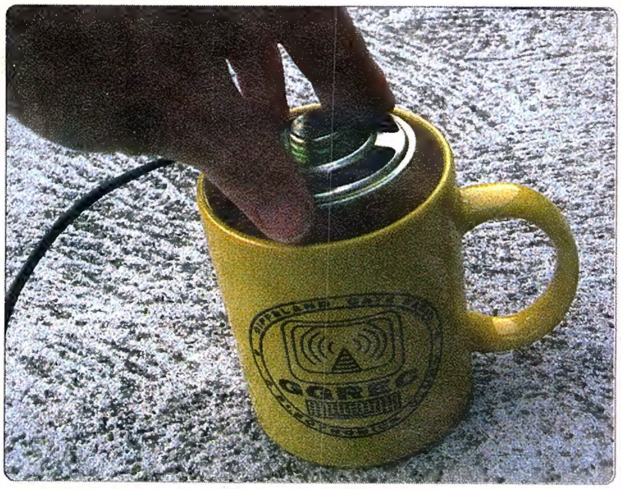


Photo 1: A simple audio CW filter using a cup.

CW DXers must often copy signals that are barely readable, either due to noise or other signals close by. Readability can be aided by better selectivity or 'pseudo stereo' reception. This article describes simple ways to improve CW reception that do not require equipment to be modified.

Improved selectivity

Because noise is proportional to receiver bandwidth and a CW signal occupies only a narrow bandwidth, then the signal to noise ratio and thus clarity should improve if the receiver's selectivity is narrowed to a few hundred hertz. Such narrow filtering is best applied before the receiver's major gain stages, as close to the antenna as possible. This minimises overload from strong adjacent signals.

A high performance simple receiver could comprise a narrow crystal filter in the antenna lead followed by a strong product detector (driven by a stable local oscillator) and a good quality audio amplifier. However the single receive frequency is a major limitation. So we normally convert incoming signals to an intermediate frequency where a crystal or mechanical filter provides the main selectivity.

A compromise, where IF filters are unobtainable, hard to fit or the transceiver has no provision for them, is to filter the audio. Either a 600 – 1000 Hz audio low pass or band pass filter provides greater selectivity than relying only on the receiver's two kHz-wide SSB IF filter.

Audio filtering's main disadvantage is that reception can be spoiled by strong signals within the receiver's IF passband (but outside its audio bandwidth) 'pumping'

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the automatic gain control. Luckily this is less of a problem in Australia than elsewhere due to our lower density of operators and (until recently) lower RF power limits.

Cup your hands over your ears when listening to a CW signal on a speaker receiver. Moving your hands slightly should result in a slight but discernible filtering effect. That's the simplest possible audio filter but it's far from perfect.

Connecting a five cm speaker to your rig's speaker output and holding it over the rim of a straight-sided cup or glass produces better results – refer to Photo 1. While listening to a weak CW signal, slowly move the speaker up and down until the received signal is louder and stands out above the noise. At this point the glass or cup is forming an effective narrow filter and you may wish to make it permanent by anchoring the speaker in position. A 10 to 33 µF capacitor wired across the speaker will provide some additional top-cut.

Despite the simplicity and effectiveness of using cups and glasses, electronic filtering is more common, probably because it can be used with headphones (another trick when receiving weak signals). Electronic filters are either active, formed from transistors or IC op-amps, or passive, requiring inductors and capacitors.

The ideal position for an electronic CW audio filter is between the receiver's first audio stage and its main audio amplifier, typically around the volume control. If you don't wish to cut into your transceiver's circuitry, another approach is to insert a filter in the headphone or external speaker lead. For this purpose a passive filter, designed around an eight to 16 ohm speaker or headphone impedance, is suggested.

Figure 1 is an example. It uses 33 µF electrolytic capacitors and 2.5 mH RF chokes (2.2 mH is also suitable) to pass frequencies below about 600 Hz and gently roll off those above. Your receiver will sound much less 'hissy' with one of these inline.

The circuit is a pi-network similar to that which suppresses harmonics on the output of transmitters. As with RF filters, adding sections sharpens filtering. After testing the circuit as shown, substitute a 68 µF capacitor for the first 33 µF and move the latter to be across the audio input connection to note the improved filtering.

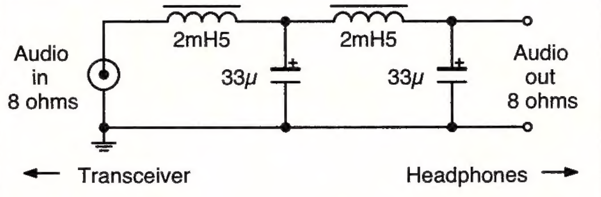

Figure 1

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Figure 1: Circuit of low pass audio filter for CW receiving.

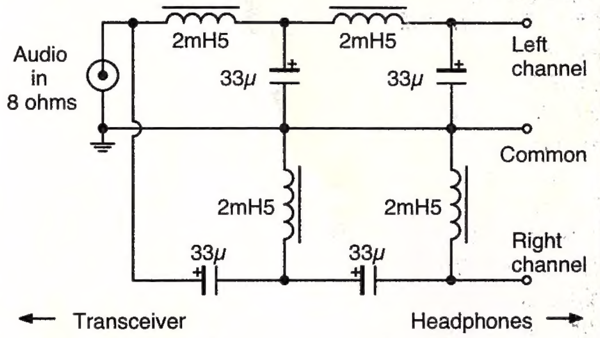

Figure 2

© AR12076_2 Drawn by VK3BR

Figure 2: Circuit of 'stereo' twin filter for CW receiving.

'Stereo' reception

All the above methods used filtering to achieve a narrow bandwidth. However experienced operators sometimes find that the benefit is less than expected. This is because the human brain is an excellent audio filter in itself. Narrow filters can also be fatiguing to use, and like AGC, DSP and indifferent audio stages, contribute to the 'canned audio' sound from some factory equipment.

Instead of trying to mimic the brain's filtering ability by presenting it with only a narrow, 'pre-digested' range of signals, what would happen if it was offered a wider bandwidth of incoming signals that exploited both ears?

This is the thinking behind diversity or stereo-like CW reception, where slightly different signals are fed to each ear. Some top commercial rigs use forms of this but the area is still wide-open for the home constructor.

Again there are different methods.

One requires two antennas and identical receivers, with each feeding one side of the headphones. Such 'diversity reception' can lessen fading as a weak signal as received on one antenna may be stronger on the other (and vice versa a few seconds later). Interference from other stations may also be less on one or the other antennas.

Binaural reception needs only one antenna but requires a special type of direct conversion receiver with two of most stages. The difference between left and right reputedly makes the desired signal more easily discerned over noise. An example was described by VK3XU in Reference 1.

A third approach requires no additional antennas or special receivers. Instead audio input from an ordinary receiver is split and fed to stereo headphones. Delay and/or filtering circuitry ensures that each channel is different from one another; apart from the slight time difference, one channel has more lows (fed by a 600 Hz low pass filter) and the other has more highs (fed by a 600 Hz high pass filter). References 2 and 3 describe experiments done by G6CJ and G3OTK. More recent work was done by DJ5IL whose detailed article appears on the web (Reference 4).

DJ5IL in Reference 4 found that introducing delay and phase differences between channels (the shift depending on the incoming signal's pitch) superior to using different audio filtering to generate differences between channels. Nevertheless others did have success with twin filters (Reference 5). Also this approach was irresistibly simple not to try.

Figure 2 shows my twin filter system, using all passive components. Audio from an ordinary SSB receiver is applied to two audio filters, one high pass and the other low pass. Each filter output goes to one side of the headphones; one with more lows and the other with more highs.

When tuning across a carrier signal the relative balance of volume between ears would change as the pitch changed. Morse signals slightly lower or higher pitched than the one of interest appear at slightly different spots between the user's ears. This spatial information, along with the tone difference, allows easier discrimination between them.

All parts were mounted on a small piece of matrix board. There is a 3.5 mm stereo headphone socket at one end and cable to the transceiver's speaker socket at the other – refer Photo 2).

The wiring of the headphone socket is critical. Possibly because we're all used to looking at spectrum charts and frequency response curves, which show the lower frequencies on the left, I opted for the left earphone to be mainly lows and the right earphone to be mainly highs. In other words the left channel would be via the low pass filter and the right via the high pass filter.

Connecting the left (low pass) channel to mate with the tip of the stereo plug had an unexpected benefit. When a headphone or speaker with a mono plug is connected, the unit operates as a simple low pass filter, the high pass section being shorted to ground. But when stereo headphones are used the listener gets both filters and 'stereo' reception. Hence the filter is usable with both mono and stereo headphones.

How well does this very simple twin filter work in practice?

Where the background is largely noise it doesn't help very much. The 'speaker in the glass' trick mentioned before is more successful. But on busy DX bands when several stations are transmitting, the twin filters do improve the ability to decipher one signal from a cacaphony. With two competing stations a few hundred hertz apart and of similar strength, the 'stereo' filter improved readability from three to about four to five. I found listening less stressful as well, though not everyone agrees; Reference 4 describes the output of twin filter arrangements as 'strange, unnatural and unpleasant', while Reference 5 liked it.

Conclusion

Several simple means to improve CW reception has been described. Results produced can be worthwhile and there is ample room for further experimentation.

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1. Diamond, Drew *Radio Projects for the Amateur*, Volume 2, A Binaural Direct Conversion Receiver, Page 20
2. Hawker, Pat *Radio Communication* October 1973, Technical Topics, Page 695.
3. Hawker, Pat *Radio Communication* August 1973, Technical Topics, Page 548.
4. Fischer, Karl The Codephaser *http://cq-cq.eu/DJ5IL_rt001.pdf*
5. Hand-Boniakowski, Jozeph *http://www.metaphoria.us/hamradio/cwdiversity.htm*

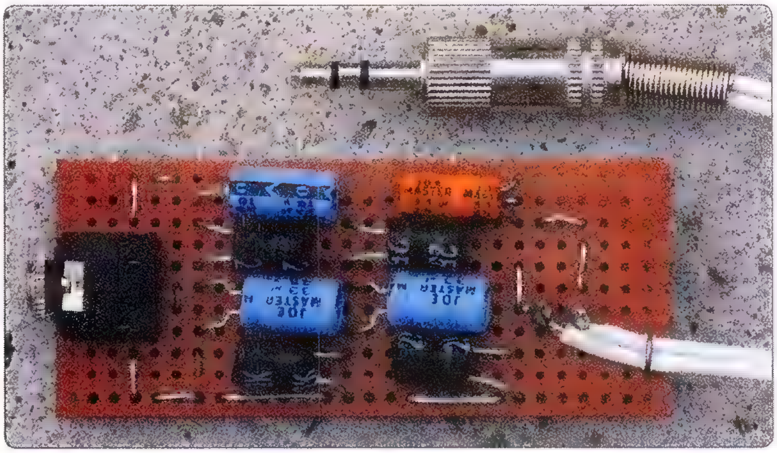

Photo 2: 'Stereo' twin filter for CW receiving.

Attend

Centre Victoria RadioFest, Kyneton

See details on page 54

10 February

APRS in radio controlled model aircraft

Ron Graham VK4BRG

It is over a year now since I started work on combining the above two interests. Hopefully, the various photos will give a reader a good overview of the mating together of the various modules used in this project. The project is too complex to give all the construction details, but I do have a lot of that information available if anyone cares to contact me privately.

Modules used

From Argent Data: *www argentdata.com*

a) an OT+ (Open Tracker Plus) kit. As well as the usual APRS requirements, these units can also handle a total of six telemetry channels. Assembly, testing and configuration details are on the web site.

b) a GPS engine. Model GT-525.

c) an eight volt model SRB MX146 two metre TX module. There is also a five volt version. Specifications, programming and connection details are also on the web site.

From Robot Gear - *www robotgear.com.au* - a Pololu Boost Regulator that gives an adjustable output from 2.5 to 9.5 volts. Their code is MCU-60026.

An image of the TX module and switching regulator are shown in Photo 1.

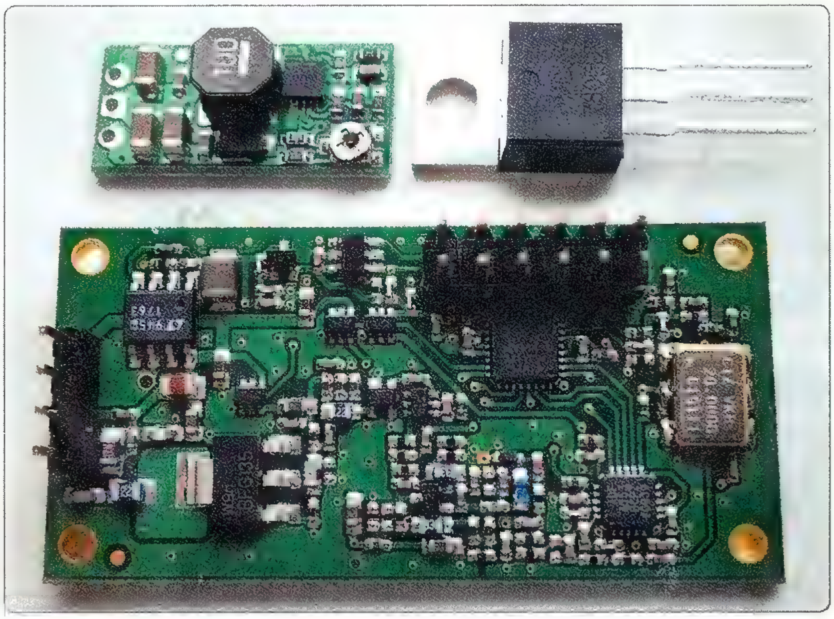

Photo 1: The switching regulator and MX 146 TX with a TO-220 device for size comparison.

Assembly

The OT+ kit was assembled but less the two DB9 connectors, five volt regulator, resistor R1 and the dual coloured LED. A four pin socket was fitted using pins two to five of the DB9 male socket. This provides suitable connections for either the GPS or a programming lead by swapping correctly configured cables. Headers are fitted in lieu of R1 and pins one and three of the DB9 female socket. These provide connections to a piece of Vero board, which is piggybacked to the OT+ board. Matching header sockets are fitted to the Vero board. An eight pin section of dual header socket is also fitted to mate with just eight pins of the 12 pin dual header on the OT+ board.

A modified three pin socket is mounted in lieu of the dual LED. Thus, remote LEDs fitted on the exterior of the model, may be easily connected.

The original six way plug on the lead to GT-525 GPS is removed

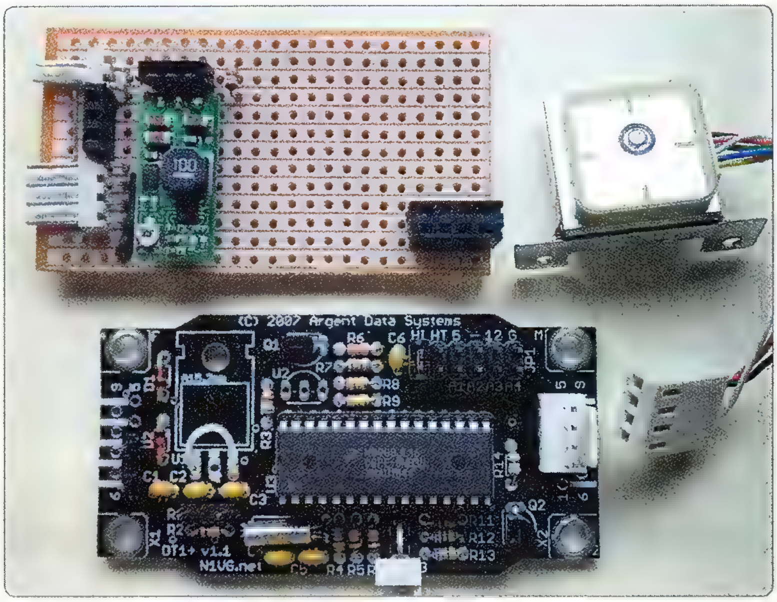

Photo 2: Assembled OT+, its Vero board assembly and modified GT-525 GPS.

keeping the lead length as long as possible. A four pin plug wired to match the OT+ four pin socket is fitted. To mount the GT-525 to the OT+ board, a piece of tin plate (or shim brass) is cut and shaped as per Photo 2. Holes are drilled to match the original DB9 mounting holes. That mounting plate is easily soldered to the tin plate body of the GPS.

Transmitter

After considerable testing, I finally decided to operate the eight volt TX with a supply voltage of just five. I did not attempt to measure the power output, but conducted some initial on air tests using a simple low antenna and results over a 2 km path seemed positive. Another piece of Vero board, with matching header sockets, was arranged to piggyback onto the TX headers. A two pin socket for the antenna at one end and a four pin socket at the other for the connections to the OT+ unit were fitted to the Vero board.

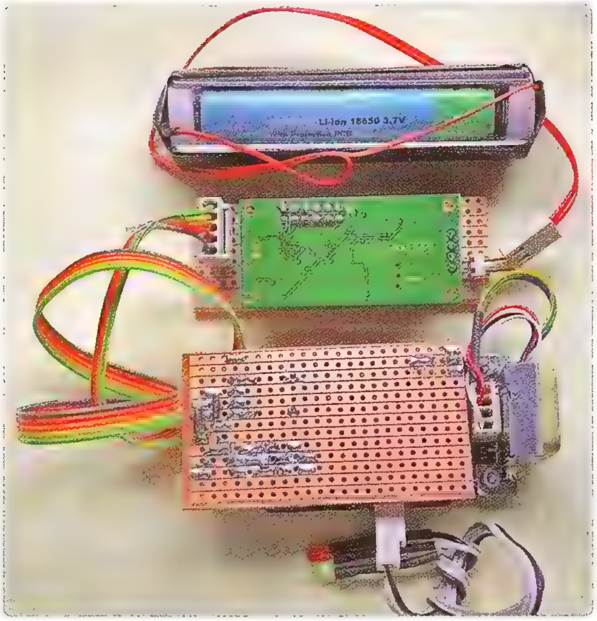

Photo 3: Li-ion cell in holder, TX fitted to its Vero board, Vero board and modified GT-525 fitted to OT+ board. The two LEDs fitted to extension cable are also visible.

I have flown two antennas made from approximately 35 gauge enamel covered wire. The first, a half wavelength long, was glued onto the outside of the wing. With the second, I did some work with an antenna analyser trying to allow for the velocity factor of the antenna fitted inside the wing. Results were somewhat inconclusive, but both this somewhat shorter antenna and the original have performed in the field to my satisfaction.

At the feed point, that thin wire terminates to a pair of twisted thin flexible wires about 75 mm long. The other end terminates in a two pin plug to

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connect to the TX vero board. The TX assembly is mounted under the wing just aft of the antenna feed point. Here, it is inside the fuselage when the wing is fixed in position.

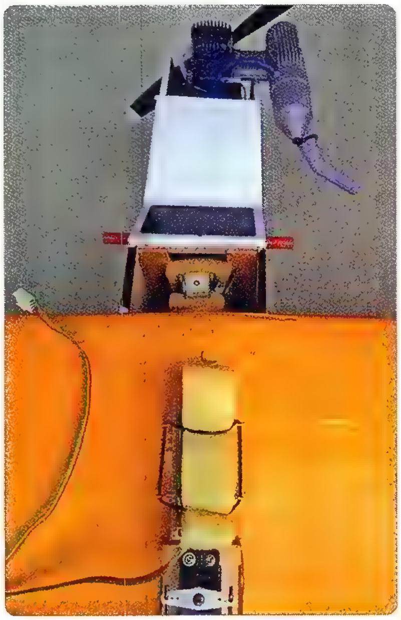


Photo 4: Fitted in model, only the GPS antenna is visible, wing is upside down to show TX unit. Both units are wrapped in foam and attached by synthetic rubber bands.

Power supply

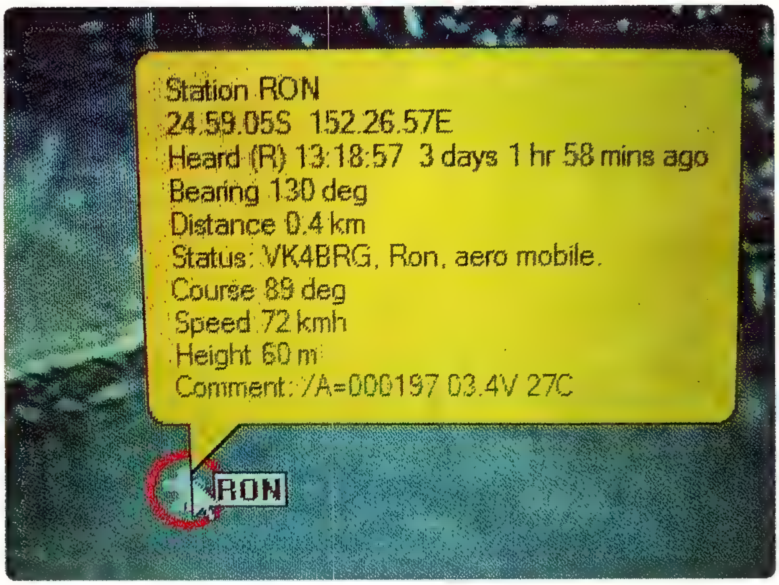
On the OT+ Vero board is mounted the switching regulator unit, adjusted to five volts output, together with the original OT+ resistor R1. This is wired to sense the battery voltage. Ample space is still available to dabble with some additional telemetry at a later date. I decided to operate the system from a nominal 3.6 volts. I have used either three series connected rechargeable NiMH cells of 2000 mAh, alternatively one rechargeable Li-ion cell of 3700 mAh capacity.

Receiving system

This consists of a handy talkie, fed via a TNC to a laptop running UI View. The APRS map of the flying area, about two km square, has been constructed from an aerial image. I currently use UI View to log (record) an entire flight. Thus, it may be replayed later and the flight details noted.

Results

I am currently using 144.8 MHz and transmitting beacons every three seconds. The results may be appreciated by analysing Photo 5. The system gives, to me, a good insight into what the model is doing at those three second intervals. The positional information could also prove of value in assisting to locate a model that ends up lost off the field. This happens on the odd occasion!



Station RON
24.59.05S 152.26.57E
Heard (R) 13:18:57 3 days 1 hr 58 mins ago
Bearing 130 deg
Distance 0.4 km
Status: VK4BRG, Ron, aero mobile.
Course 89 deg
Speed 72 kmh
Height 60 m
Comment: /A=000197 03.4V 27C

Photo 5: An image taken at one instant of a flight. Remember that this image is updated every three seconds and in effect gives the model's position as it moves relative to the map.

The image shows a section of the original two km square map with the club airfield in the centre. This is the light coloured square to the left of the caption. The diagonal cross near the centre of the airfield are the actual runways of mown grass.

I am currently using a tactical call sign of 'RON' for the aircraft and the rather indistinct icon is the APRS symbol for a small plane.

The information in the caption is mostly self-explanatory. The altitude is the height above sea level, so the airfield height of 20 metres needs to be deducted to obtain the altitude above ground. The last line is the telemetry frame. Each frame is given a sequential number, which is the first number, 000197. Thus that frame is 197 x 3 seconds since turning on the model's equipment. The 03.4 V is the equipment battery voltage, the 27 C is the temperature.

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When Murphy ruined my ‘Swansong’

David Pilley VK2AYD

After 65 years of HF contesting I decided this would be my ‘Swansong’ year and the RD Contest would be my farewell. Time to down size and kiss the FT-1000 and FL-7000 goodbye.

The morning of the RD Contest I checked the station out. We had just suffered a severe gale, so damage could have occurred to the LF antennas. All was well. Halyards were tight and the SWR was showing good. I down loaded the latest up-date for logging. I was all set with the intent ‘I’m in it to win it’.

I decided CW *only*, that’s my first love! A check on the bands showed 20 and 15 were literally alive with Europeans. Of course, it’s the WAE contest and they were in full chorus. So the rig was set for 40 metres. 0900Z came. Interesting, just a few CW stations, has the language died! Another interesting note. On 20 the contesters keying speeds were in excess of 35 wpm, but on 40 they were down to 10 to 20 wpm. Definitely no three QSOs a minute occurring here! In this contest I had time to say hello to old friends – a real social event.

Whatever. I really got stuck into the RD Test switching between 40, 80 and 160. I was using a different logging program designed specifically for the RD test, rather than my old faithful ‘CT’ logger. I kept at it up until about half past midnight. The bands were quiet, so time to take a short nap.

That’s when Murphy struck! With most programs when you click on that little red ‘X’ a message comes up and asks if you want to ‘save or quit’. I clicked on the ‘X’ and my entire log disappeared. Gone. Evaporated.

I was totally devastated. I sat staring at the monitor for a full minute in total silence. This was my ‘Swansong’ and ‘puff’ it disappeared. I went to bed saddened. My last contest a total failure.

Well, maybe. Maybe next year I’ll go /P QRP and take a pencil and paper with me. Don’t count me out yet!

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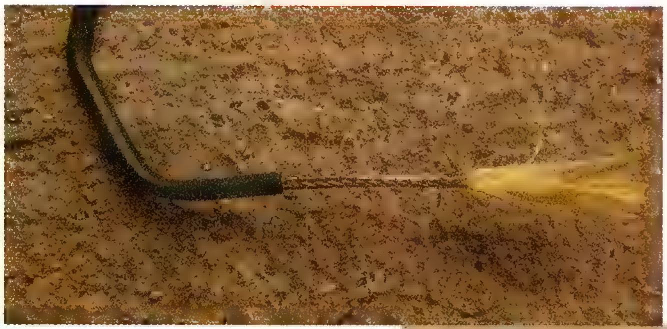

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HF's 'gig guide': the low down on the best bands

Peter Parker VK3YE

Introduction

Radio magazines and websites often review transceivers, even though the differences between most aren't great. Our bands show more variation and it's time these got a hard-nosed review. This article reveals the good, the bad and the ugly of our allocations up to 50 MHz.

Knowing this will help when deciding which bands to specialise in or antennas to take mobile. It's also helpful if building a transmitter or transceiver. All simple designs are monoband and even the best rig on a quiet band will only sometimes be useful.

Each band has star ratings for activity, propagation, sociability and ease of antennas. The more stars the better, except for propagation volatility.

Regional variations exist. The north has better propagation on the higher bands in exchange for more lightning interference. The interior has less noise. The east's denser population helps activity on the lower HF bands, summer short-skip on the higher bands and specialised modes. So use the stars as a guide only.

Assessment points

Each band was rated on seven points as shown in the table. Points were given for the following:

1. **Activity level:** A guide to the amount of activity you'll likely hear. Divided into day and night by mode. This varies greatly with conditions and contests.
2 **Geographic coverage:** Relates to the distances that the band is most suited for. There are four ranges: Local, up to 100 km, Intrastate, 100 – 500 km, Interstate, 500 – 3000 km and DX, over 3000 km.

Photo 1: During summer the higher HF bands shine for pedestrian mobile.

3. **Propagation volatility:** The extent to which varying band conditions affect the ability to get contacts. Solar activity is the big player here.
4. **Sociability (or chattiness):** A rating based on three factors: (a) whether contacts typically progress beyond signal reports; (b) the number of stations heard calling CQ and (c) whether

Table: Ratings per band (more stars = better, except volatility).

Band >	160	80	40	30	20	17	15	12	10	6
1a. Activity – day										
SSB		*	***	*	***	**	**	*	**	*
AM	*		**						*	
FM									*	*
Digital			*	***	***	*	*	*	*	
SSTV			*		***					
CW			**	**	***	**	**	*	**	*
1b. Activity – night										
SSB	**	***	***		**	*	*		*	
AM	*	*								
FM										*
Digital		*	**	***	**					
SSTV		*			**					
CW	*	**	***	**	***	*	*			
2. Coverage										
< 100 km	***	***	***	**	*	*	*	*	***	***
100 – 500 km	**	***	***	**	*	*	*	*	*	*
500 – 3000 km	*	**	***	***	***	**	**	**	***	***
> 3000 km	*	*	**	***	***	***	***	**	**	*
3. Propagation volatility	*	*	*	**	**	**	***	***	***	***
4. Sociability	***	***	***	**	*	**	*	**	***	*
5. Turn on and talk	*	***	***	**	***	*	*		*	
6. Antenna ease	*	*	**	**	***	***	***	***	***	***
7. Construction ease	***	***	***	**	**	**	*	*	*	*

Key to ratings:

( ) Very low (*) Low (**) Medium (***) High stations calling CQ are seeking contacts from specific regions or will take all comers.

5. **Turn on and talk:** Encapsulating all the above, this rates the chance you'd be able to make contacts if you turned on randomly. It's inversely related to volatility, but factors like time of day, time of year and sunspot number increase your chances on otherwise quiet bands.
6. **Antenna ease:** A high score here means that (a) it is easy to achieve near-dipole performance with compact portable, mobile or limited space antennas and that (b) directional antennas with above-dipole gain are practical in a suburban setting.
7. **Equipment construction ease:** More stars mean easier construction from available parts. Lower frequency rigs generally use fewer stages, are more frequency stable and don't need specialised RF transistors.

Applicability and conclusion

The table summarises a lot of information in a small space. Use it when planning portable operating, antennas to build or bands to select. Examples where it could be useful include:

- You're planning a backpacking trip and want reliable CW or SSB contacts with simple equipment and a wire antenna. A band like 40 metres might win for its lack of volatility, activity, sociability and antenna ease.
- HF pedestrian mobile during a Christmas holiday is desired, with limited antenna space and output power. 10 metres could be a good bet for antenna ease, coverage and sociability.
- You're setting up a station and want reliable afternoon and evening SSB contacts with a simple antenna. Space isn't a problem. 80 and 40 metres are suggested.
- Digital modes are more your thing and you have an interest in reliably working DX. 30 or 20 metres ticks all the boxes.

Conclusion

Presented is a concise summary of the best HF bands for your favourite amateur activity. While only a broad guide due to propagation and regional differences, it should still be useful when planning activity and projects.

Photo 2: Band choice has a major bearing on the contacts you'll make.

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Why always pick on the poor 'V'? More about the dreaded 'diddly-dahs'!

Michael Krochmal VK3KRO – kroch@autoscan.com.au

Back in April and May of 2000, I contributed an article to *AR* called 'Conquer the BW and get your CW' (with BW standing for the 'Bludger Within'). It was a great article about learning the Morse code but, alas, I didn't write it – I just translated it from the German. It was written by a much better man than I: Dieter Engels DJ6TE.

Since then, the Morse code has become increasingly marginalised, in relation to the issue of gaining a radio amateur license. It's considered to be about as up-to-date as button-up boots.

But, just like button-up boots, 'The Code' has a charm of its very own. And as with music, that charm is a highly personal thing: code has its attractions for some, but not for others. So there will always be those who couldn't care less about CW. The following thoughts are addressed to those who may care, but are stressed by the prospect of learning the code.

It seems that many people refer to CW as 'the dreaded diddly-dahs'. In Morse code, diddly-dah would be a 'V' (...-, or dot dot dot dash. Which sounds very clumsy. So the convention has been to use dit and dah instead of dot and dash, didit instead of dot dot, and diddly instead of dot dot dot. In front of a dah, the dit becomes simply di. So 'A' is 'di dah'. All of which sounds so much nicer, and it's smooth! Of course, purists may still wish to stick with dit dit dit dah [which sounds like something Beethoven might have written] instead of diddly dah). Anyway, hence my question above. And also, anyway: why 'dreaded'?

When I was a kid, back in the '60s (1960s, not 1860s ...), there was a fascinating old gentleman about town. His name was Ainslie Meares, and he wrote several books, most of which I read avidly at the time. The one that is relevant to this topic was called 'Relief Without Drugs'. One idea in it was that pain is not what we think it is: when we dread the impending visit to the dentist (for instance), there is an *anticipated* pain (my words), which is added to the *actual* pain at the time of the dentist visit, to make an overwhelming grand total *perceived* pain. This remarkable man's insight was that usually the *anticipated* pain far outweighs the *actual* pain ('a coward dies a thousand deaths'), and he outlined some techniques for minimising anticipated pain. I'm hoping that this article will assist in reducing the anticipated pain, and thus minimise the total perceived pain in learning Morse.

In this day and age of smart phones, the possibilities for learning the code are greater than ever. Many years ago, I read a rather weighty tome called 'The Art and Skill of Radio-Telegraphy', written by William G. Pierpont N0HFF, one of nature's true gentlemen (I had some brief email traffic with him. Sadly, after leading a remarkable life, he became a SK in 2003: check out *http://www.reltech.org/TC/v08/Pierpont2003obit.html*). His book, freely available on the Internet is, in many people's assessment, the best book *ever* written on this topic. I would recommend it highly to anybody who is even remotely interested in this fascinating subject. It contains many gems, but one of the main points he makes is that the Morse code is not a visual thing, but an aural one. In his book, Pierpont actually says that if you have any of those dot-dot-dash charts that have always been so popular with people wanting to learn the code, then you should take it and BURN it!

The implantation of a visual representation of the code for particular letters seems to be one of the greatest obstacles to learning the code. What people who have been exposed to these visual images instinctively do is to turn the sound of a letter into a visual image (oh, yes: that's dot, dot, dot), and then transform that into the associated letter. Or they will think of a letter, 'see' the letter in the chart, and then convert that image into a sound. That process takes a long time. In the meantime, several more letters have come and gone. Pierpont suggests that, in order to truly 'speak' code, quickly and efficiently, it is necessary to directly associate the sounds with letters and vice versa.

Of course, young people do have a distinct advantage in this learning process: their brains are still 'plastic', and they are able to take in lots of information. In fact, babies are easily able to separately learn several languages at once, because their brains are 'wide open'. They just absorb information like a sponge. I read a story once, about a boy whose father worked for the US railways and was always sending and receiving telegraphic messages. The boy, who would spend the evenings playing on the floor and listening to the code traffic, somehow just 'absorbed' the code and became very proficient at it. Presumably, the father would have mumbled the words as the code came in, and the boy would have been able to associate the two. But there was no formal training involved.

Sadly, this great capacity for absorbing language seems to be best only within a narrow 'window of opportunity'. I know, because I was lucky enough to be situated within that window when my family migrated here from Germany in 1960, when I was 11. I am completely bilingual – this includes a mastery of idiomatic expressions in both languages, no foreign accent in either, and the ability to think and dream in both. However, my younger brother, six years my junior, has never had much of a grasp of German, whereas my older sister, only three years older than I am, has a perfect command of English, but still has a German accent after 50 years in Australia. Presumably we have the same genes, although Father sometimes thought that, in my case, it was the postal lady and the milkman! Interesting how the brain works.

Recent research into language learning has also shown that it is apparently highly valuable to watch foreign movies and listen to foreign music, in the target language, even if they are not understood. Somehow (possibly with the help of subtitles and other, more subtle, clues), the brain just 'picks it up', and learns by osmosis. It's a truly fascinating field of study.

But there may be hope for us old folks yet! There is a really sensational book (well, in *my* books, anyway…), called 'The Brain That Changes Itself', written by Norman Doidge MD. This book deals with new insights into *brain plasticity*. Research is now going on into how we can 'keep the brain open' for longer, or even 'reopen' it later in life. It also appears (though this is not directly related to the point I'm trying to make in this article) that the brain can actually 'rewire' itself, and thus regain functions lost as a consequence of disease, birth defects, or trauma. The initial results are incredible, and I intend to continue to follow this field of research with great interest.

The reason I mention these asides is that learning the Morse code is truly possible for anybody who makes up their mind that this is what they want to do. And that is not just my own ignorant opinion – it is repeated and reflected wherever I have travelled in my wide reading adventures on this topic.

Of course, nowadays, with the fruits of modern technology available to us all, there are many highly effective tools to assist us in the task. There have been a great many wonderful computing programs available for years, both for the Apple and Windows platforms. But now, with the advent of smart phones and tablets, the range is greater than ever. And most of these applications ('apps') are available free of charge. My own smart phone is based on the 'Android' operating system, and when I go to the 'Android Marketplace' and dial in 'Morse code', I am greeted by no less than 375 results - today. The vast majority of these are free, but the average price is about one dollar. I have not checked them all, and there do appear to be a couple of 'expensive' ones, at about $5. I have no idea what these ones do: I haven't even checked them, as the free ones are more than adequate for my needs. There are any number of apps that will let you whistle into the phone, tap two areas of the screen, one for the *dit* and one for the *dah*, play code to you, and provide you with all the information you can handle. I'm sure that all of these and more would also be available for the Apple and Windows platforms. I would not even attempt a listing here, as it would be *huge*. The interested reader could also try Googling 'Morse code' on the Internet – I'm sure that the result would be like drinking from a fire hydrant. Actually, I just did that for fun. The basic search for 'Morse code' brought up about *six and a half million* results! And apart from that, Google had a whole list of other search suggestions, such as Morse Code History, Morse Code Translator, Morse Code Decoder, Morse Code Practice, Morse Code Sound and so on. Tomorrow, there will be more, because you never step into the same Internet twice.

One thing that is, of course, fundamental to learning *anything* is just three simple little things:

Practice, practice, practice!

What I have found tremendously useful is to translate everything my eyes perceive into Morse. So, on my daily four km walk around a local park, I 'translate' every car number plate I see, every sign that comes into my field of vision, and also lots of other things I'm looking at : tree, fence, path. Doesn't matter what it is. The only thing that matters is lots and lots of repetition. That's the way to burn the new pathway into the brain. It's a sacrifice you just have to make: *no pain, no gain*. There's that funny story about Isaac Stern (probably apocryphal – in another version it was Jascha Heifetz), a world-famous violinist. A woman came up to him after one of his fabulous concerts and said 'Mr. Heifetz, I'd give my whole life to be able to play like that'. His brief reply? 'I did!'

So the issue, as always, is whether you have the *will* to learn the code. Now that the Morse code is no longer *de rigeur* for the attainment of a license, the issue of whether 'To Morse or not to Morse' as Shakespeare might have put it is, more than ever, a matter of personal taste.

I will leave you with a funny technique that was used in Germany when I was a kid (maybe it still is, and maybe I still am …) It's a mnemonic (word association) technique which consists of a list of words and phrases associated with each letter that give you a clue to the code. The vowels are the elements of importance - in each case, the presence of an 'o' signals a dash, while the presence of any other vowel signals a dot.

So, for instance, 'Jawohl Odol!' will always stick in my mind. Literally translated, it means 'Yessir!, Odol!' (which is a popular mouthwash, still available after all these years. The exclamation marks mean that you have to click your heels when you pronounce this sentence ...) So there's the clue that 'J' is di dah dah dah; sorry to use the forbidden visual representation here, but I haven't worked out how to include sounds in an *AR* article yet. So perhaps this is a technique on the borderline between the visual and the aural. It may appeal to some readers. The establishment of an English equivalent, as was so often eloquently but extremely frustratingly indicated in my university textbooks 'will be left as an exercise for the reader.'

OK, that's a bit cruel and draconian, so I won't leave the reader hanging entirely, the way the writers of our engineering textbooks did me. Here are some possible examples:

A - *Arrow*
B – *Borax is bad*
E – '*Eh*?' (you get to be a bit hard of hearing at my age ...)
G – *Goroka* (place I nearly ended up in, in New Guinea), or *Gold Ore*
I – *Iski* (container for ice and drinks. In New Zealand)
M – *Motto*
X – *Xhosa is old* (so is that great movie 'The Gods Must be Crazy').
Z – '*Zorro Here*!' Not sure whether they had phones in those days, though.

So you get the general idea, yes? Make your own mnemonic set!

Good luck with the Morse – may your diddly dahs, sung, not printed, never be 'dreaded'.

Silent Key

Tom Walker VK4BTW

On 19 November, 2012, Thomas Allan Walker passed away after contending for some years with a weakening heart.

Tom was born on 11 December, 1919 to Sutherland Douglas and Eleanor Jean Walker at 'Ripera', South Dulacca, southern inland Queensland. He received primary school education at the South Dulacca State School, and his secondary education was received at the Gatton campus of the Queensland Agricultural and High School College, graduating with his Junior Certificate.

He returned home to look after the farm upon the unexpected death of his father. Tom built his first radio from technical journals prior to undertaking a radio course by correspondence, studying at night by the light of the acetylene lamp. He did this study while working at sucker bashing (clearing of scrub re-growth) and dam building during the day.

Having gained his Certificate for Radio Service Engineering in 1945, he undertook to repair radios and television sets in the area 'to help people out'. This helpfulness was the hallmark of Tom Walker's life.

He also installed and serviced home lighting plants from generator to the last light bulb, but when, in 1965, reticulated power was introduced, his lack of electrical qualifications prevented him from continuing in this line.

In 1953 Tom, with his wife Miriam, established the Dulacca Radio Service, adding television qualifications to his skills in 1961.

Ultimately, Tom, Miriam and their children Carmen, Allan, Rhys (deceased) and Ken moved to Toowoomba, where Tom finished his working life as a technician at what is now WinTV.

Tom joined the Darling Downs Radio Club in the late 1970s, and with the help of Roley Norgaard (ex VK4AOR) with mastering Morse code, he successfully contested the AOCP exam, gaining VK4BTW as his call sign.

He received quite a few awards from the WIA re his service to amateur radio in Queensland. The most well-known was for his work with Intruder Watch, now IARUMS. Tom was State Co-ordinator, and every Friday afternoon would see him on 40 metres with Gordon VK4KAL (Federal Co-ordinator) who lived at Rubyale, in central Queensland.

Tom always made himself available to any budding amateurs, practically and sympathetically, yet for all his vast knowledge and experience, his life was an example of humility and modesty. For this he was highly regarded and respected, being invited annually to conduct the election of officers at the AGM.

In later years, after a severe heart attack, his HF activities diminished to the point of ceasing altogether. However, he continued, almost to the end, convening the two metre net each Sunday morning via the Club's repeater VK4RDD at Toowoomba.

He is greatly missed by Club members and on air friends.

73 Tom.

Contributed by Theo Moller VK4ESK.

Attend

Central Coast ARC Field Day, Wyong | 24 February

An HF crystal set: a practical exercise in refined simplicity

Peter Parker VK3YE

Introduction

While sunglasses, painkillers and air conditioning all increase comfort, they numb our feeling, distance us from nature and lessen consciousness of its laws. Advanced receivers similarly nobble our RF senses and reduce awareness of phenomena in which amateurs profess interest. Building and using a simple receiver once in a while is a good antidote. The 'RF awareness' attained brings intellectual reward and thoroughly tests operator skills.

Described here is the simplest HF receiver you will see anywhere. A handful of parts are between the antenna and the operator. There is no oscillating regenerative detector susceptible to frequency pulling or overload. Also absent is a potentially microphonic multi-stage audio chain. Instead just one transistor provides all gain, adequately driving a crystal earpiece. This can be switched out, providing true 'crystal set' reception of amateur activity. Each occasion this happens is a tribute to your workmanship.

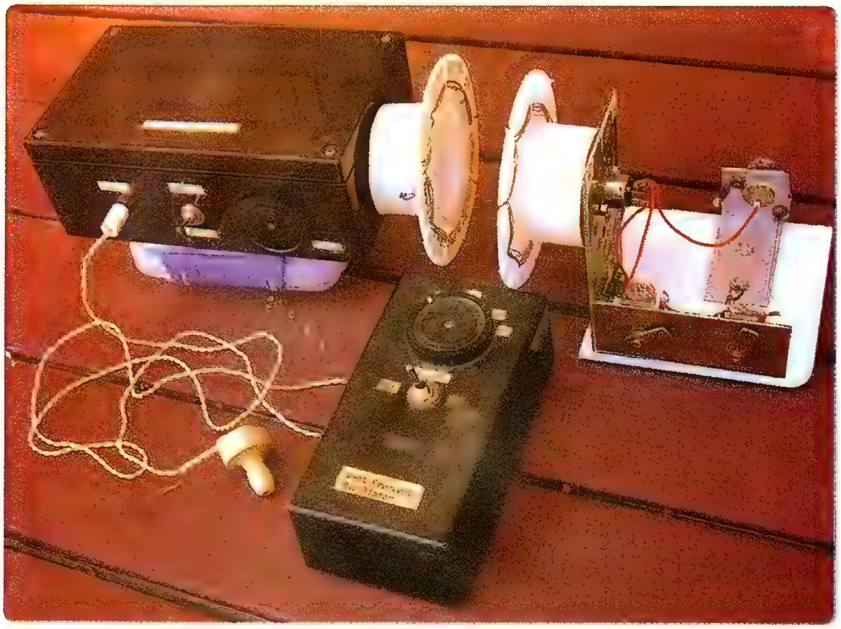


Photo 1: The entire receiving station. L to R: detector unit, BFO, antenna coupler.

Circuit description

The basic receiver is a conventional crystal set followed by a one transistor amplifier to drive a crystal earpiece. Only have low impedance phones? Add an LM386 amplifier stage instead or as well. The flat spiderweb coil performed better than the conventional solenoid type used in an earlier version. It tunes approximately three to eight MHz, allowing reception of 80 and 40 metres. Two add-ons, new to those unacquainted with high performance crystal sets, aid the performance of the basic detector unit.

The first is an external beat frequency oscillator which operates on the received frequency, or a sub-harmonic of it. This raises sensitivity by providing RF bias to overcome the diode detector's low sensitivity. It gives a leg-up to lift the incoming signal above the 0.3 volt hurdle imposed by the diode. The BFO also allows CW/SSB reception on a detector that would otherwise demodulate AM signals only. Instead of being fixed at a particular intermediate frequency, it is made variable, effectively operating as a tuning control. BFO injection is achieved by holding it near the detector coil; being electrically separate it does not have the frequency pulling problems that sometimes plague regenerative receivers.

Second is the antenna coupling unit. This provides another tuned circuit, aiding selectivity, and more efficiently transfers power from the antenna to the receiver. Efficiency does not matter much in complex receivers but is critical when only a few stages provide all the gain.

Together the three units comprise a workable receiver. A matching transmitter is not described, but would require only a few more parts. At its most basic the BFO could be keyed, boosted in output and have an antenna connected. While such a two transistor CW transceiver may provide contacts of up to several hundred kilometres, one or two more transistors and a 500 mW RF output would greatly increase its reliable range.

Parts

Parts are available from the usual stockists, though you may need to order the 3.58 MHz ceramic resonator for the BFO from Rockby or Element14 (Farnell). Get several as they are useful for other projects. I used standard 60/160 pF plastic dielectric tuning capacitors, though

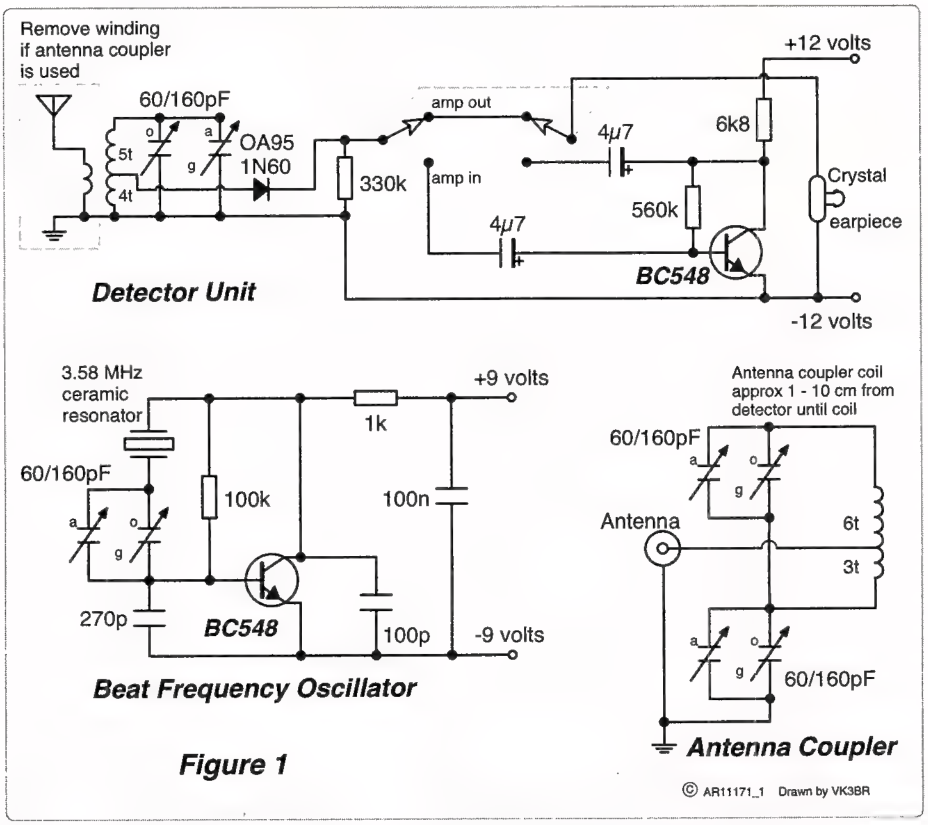


Figure 1: The schematic diagram of detector, BFO and antenna coupler.

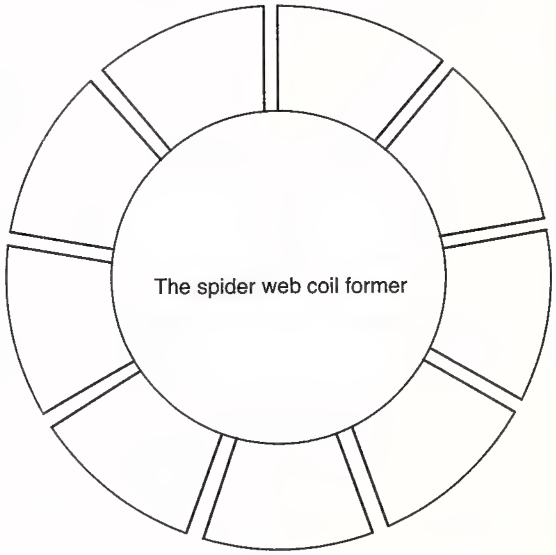
if you have the larger metal type, use these instead. The pictured case puts function above decor. However crystal set makers often value style and choices abound. Polished timber gives a 1920s look that suits air spaced tuning capacitors and bare square wiring. Wood scraps evoke depression or war. Art deco or minimalist plastic and chrome are retro chic, while bold primary colours signal a set not content as background. In ten years' time, the 1980s boxy black plastic boom box look may have become sufficiently old school to be treasured not trashed.

Well-crafted spider web formers add character. Thick cardboard, contraptions with popsticks or pre-made formers made especially for the hobby radio market are all possibilities. In the end I used the plastic spool left over from 100 metres of thin insulated wire. These split into halves, just right for a single set of coils. Whichever former chosen must have an odd number of tabs so that winding is over-under wicker style, with alternate turns the same pattern, to minimise self-capacitance.

Construction and testing

Detector unit

Start with the detector unit. Build the transistor amplifier on the back of the switch; a circuit board is overkill for so few parts. Keep leads short. A socket for the coil is desirable to experiment with other bands. I have yet to find a cheap and robust low-capacitance multi-pin connector suitable for RF. I compromised with 5-pin DIN connectors, though their stray capacitance is not ideal for high quality tuned circuits. Making the coil will take longer than the rest of the project. Make a former, like shown in Figure 2, from a flat piece of cardboard or plastic. Exact dimensions are not critical but do remember the odd number of slots. Either enamelled copper wire or thin insulated wire is suitable for the windings. Litz wire will also work and may give higher Q. Wind maybe nine turns onto the former, passing the wire in and out of the slots to create an alternating basket weave pattern (see photo). Connect the diode to a tap about half way along. Once done add a single turn primary winding for the temporary antenna connection.



Detector coil: 9 turns enamelled copper wire, tap 4 turns up from start for diode.

Antenna coupler coil: 9 turns enamelled copper wire tap 3 turns up from start for antenna socket.

Figure 2

© AR11171_2 Drawn by VK3BR

Figure 2: The coil former diagram.

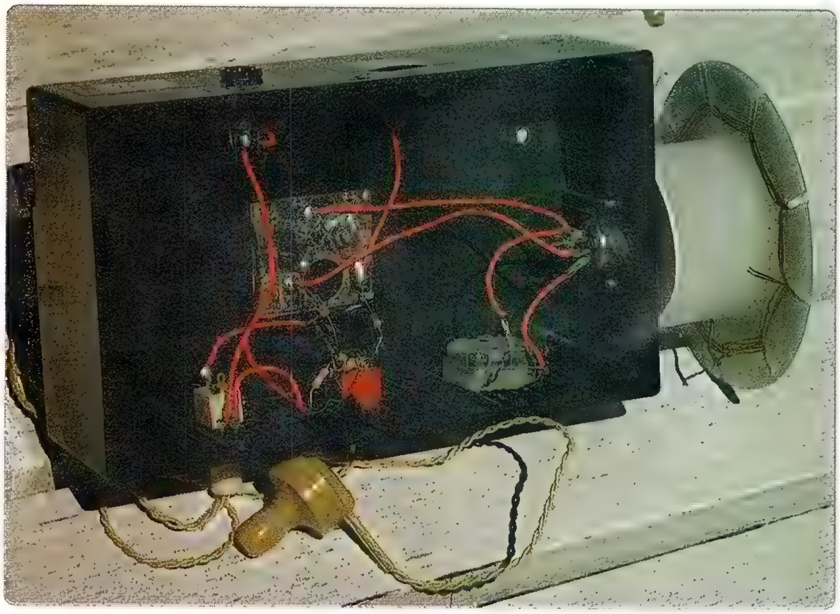


Photo 2: The detector unit – inside.

That completes the detector module. Test by connecting a large wire antenna, for example, a HF dipole or end-fed, to one end of primary and, optionally, an earth. With the audio amplifier on you should hear at least one or two of the stronger shortwave stations at night, for example Radio Australia or China Radio. These signals should be a good strength in the ear piece and even audible with no amplification, that is, true crystal set reception.

If received signals are weak you may need better antenna coupling. More on this later, but for now try a transmitting type HF antenna tuning unit in the antenna line if you have one. Low receiver gain makes efficient coupling essential for strength. Also try more audio amplification, for example, an LM386 module, and taking turns off the coil to avoid missing coverage of the 41, 49 and 60 metre bands where strong signals are found.

If unsure of the set's coverage, transmit SSB or AM test signals on 3.5 and 7 MHz and find these on the receiver. Add or remove coil turns if required – aim for a 3 to 8 MHz span to cover both bands. The other test you can do involves the transceiver in CW mode. Attach a small dummy load on a short length of coax. Set the frequency to approximately 3.6 MHz, adjust power output to a few watts and press the key. Bring the dummy load near the spider web coil. The purpose of this is to provide RF bias for the detector. If it is at night you may be able to hear 80 metre signals when the front end is peaked. Vary the carrier's frequency and follow with the receiver's tuning control. This exercise proves that the receiver works for amateur SSB reception and gives a feel for how it will operate after the BFO module is built.

BFO unit

The next module is the BFO. This is a one transistor circuit based on a 3.58 MHz ceramic resonator which can be pulled in frequency, between approximately 3.525 and 3.625 MHz. Its second harmonic allows coverage of 7 MHz as well. Avoid a metal box for the BFO; use plastic, timber or open air instead. This is because leakage from it provides the RF bias to the detector. Again there are too few parts to warrant a circuit board. It is a simple circuit that should oscillate first time, though you may care to experiment with capacitor values to optimise coverage. Different resonators give different pulling

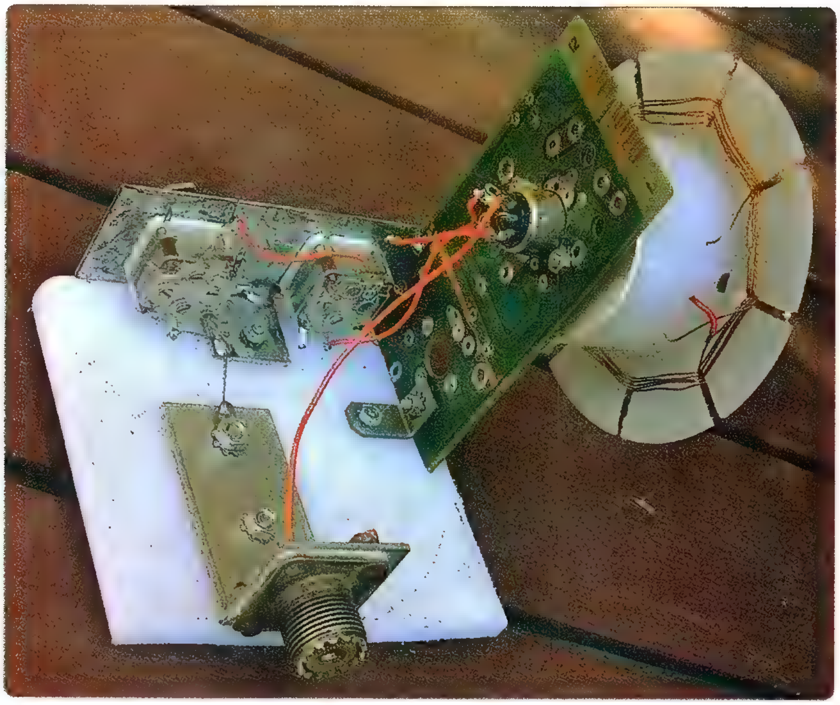


Photo 3: The antenna coupler unit.

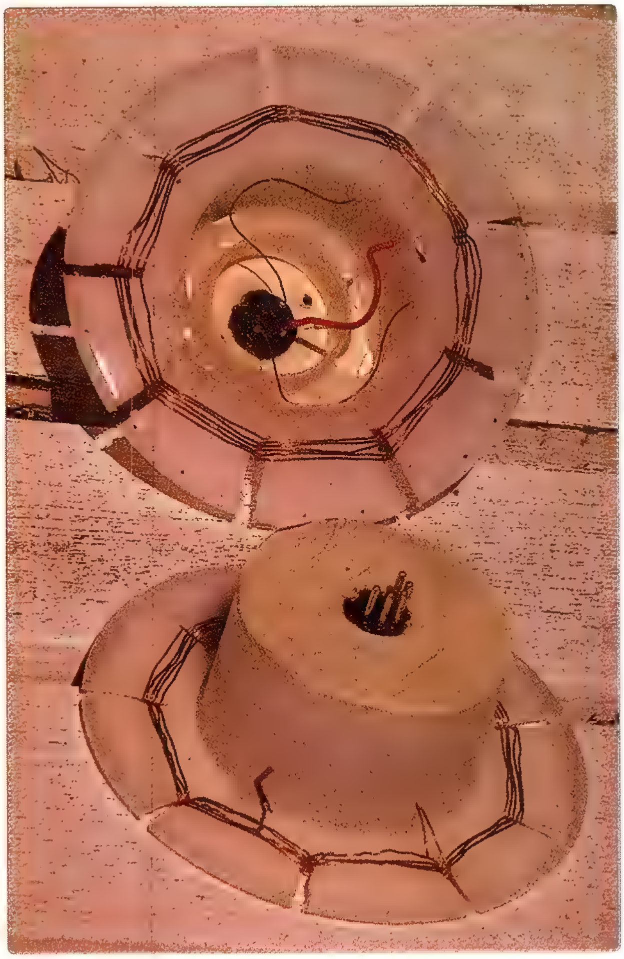


Photo 4: A set of coils.

ranges. I would suggest reducing the 270 pF capacitor to 47 pF or lower if you do not get good top end coverage. Do these tests with an HF receiver or transceiver that covers 3.5 MHz. When satisfied with your pulling range calibrate the BFO's dial against the frequency on the receiver to provide an indication of received frequency. Holding the BFO near the detector coil should allow reception of 80 and 40 metre amateur signals. Again use an antenna coupling unit to optimise signal transfer.

Antenna coupler

Experience with the antenna coupler will have demonstrated how critical its adjustment was to receive signals at adequate strength. Instead of tying up your stations, build this stand-alone unit to improve selectivity and adjacent frequency rejection. It has just three parts, a spiderweb coil and two variable capacitors. The coil is the same as for the detector module's, except the antenna tap is three turns from the end nearest earth. Both gangs of the tuning capacitor (outer pins) are wired in parallel. Once the coupler is built you won't need the primary antenna winding on the detector coil; this can be removed.

In use the coupler is placed near but not physically connected to the detector module. Its coil must be level with the detector's coil, with the spacing between them governing the amount of coupling required. The BFO is sat near the two coils and is moved around for best strength, the closer the BFO is the better the reception, up to a point!

You will notice some interaction between the settings of the detector's tuning, both coupler controls and coil spacing. The adjustments are necessary to optimise performance but do mean the set is not suited to fast band changes. It's a good idea to make scales for each dial, or at least a table giving o'clock positions for each band. Do the main tuning with the BFO and peak the other controls for strength.

A well-built set should provide comfortable earphone reception of amateur 80 and 40 metre SSB signals in a quiet room with only the one transistor amplifier. At the author's location even band noise is also audible. Some signals should be detectable with the diode alone, especially on 80 metres. A few may be copiable, providing true crystal set reception. A better antenna, tuning capacitors, coil and earphone matching would allow more to be heard without the amplifier. Improvement through painstaking optimisation is the core of radio experimentation and can be highly rewarding.

It is worth testing the boosting effect of the BFO on AM signals. Unless the signal is very strong you won't hear it with the BFO off. But with the BFO providing RF bias, previously undetectable AM signals will become copiable. Of course you do not need to build this receiver to enjoy this benefit; teaming a VFO or RF signal generator with a crystal or even regenerative receiver will be worthwhile, as was proved as far back as the 1930s but forgotten later.

Conclusion

I have described an approach to HF reception more like early techniques than modern radio. It places simplicity above complexity and system efficiency over gain. Operator involvement in construction and use is high. Even if you don't build it, I recommend the philosophical approach to other projects you may attempt.

References and further reading

The Tuggle Tuner - *http://www.antiquewireless.org/otb/dxxtal.htm*

The Lynondyne - *http://www.crystalradio.net/crystalsets/lyonodyne/index.shtml*

Robinson, HA *'Regenerative Detectors, What We Get From Them - How To Get More'*, 'QST', pages 26-30 & 90, February, 1933.

Foundation Corner 22:

A hands on review of the Wouxun KG-UV6D hand held

Ross Pittard VK3CE

Increasingly over the past few months I have been intrigued by the price and features offered by the Chinese radios becoming available on the amateur market via both eBay and some amateur shops in Australia. As I understand it, the ACMA considers any radio that transmits outside the VHF/UHF amateur bands as being a LMR (land mobile radio) and is illegal to own or use in Australia unless the radio is type approved by the ACMA. So a word of caution, before buying, first inquire whether the radio will transmit outside of the amateur bands; if it does, leave well alone.

Having said all of that both the *AR* editor (Peter Freeman VK3PF) and myself were interested in seeing how the Wouxun lines up against the more traditional radios available on the local amateur market. It was a toss-up as to who was going to buy one and I won, or maybe lost, depending on the outcome of the tests.

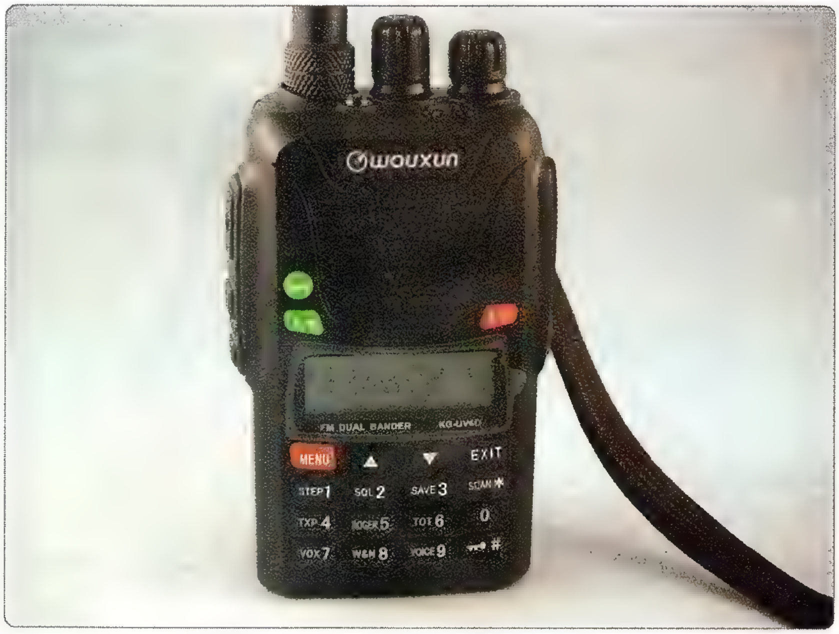


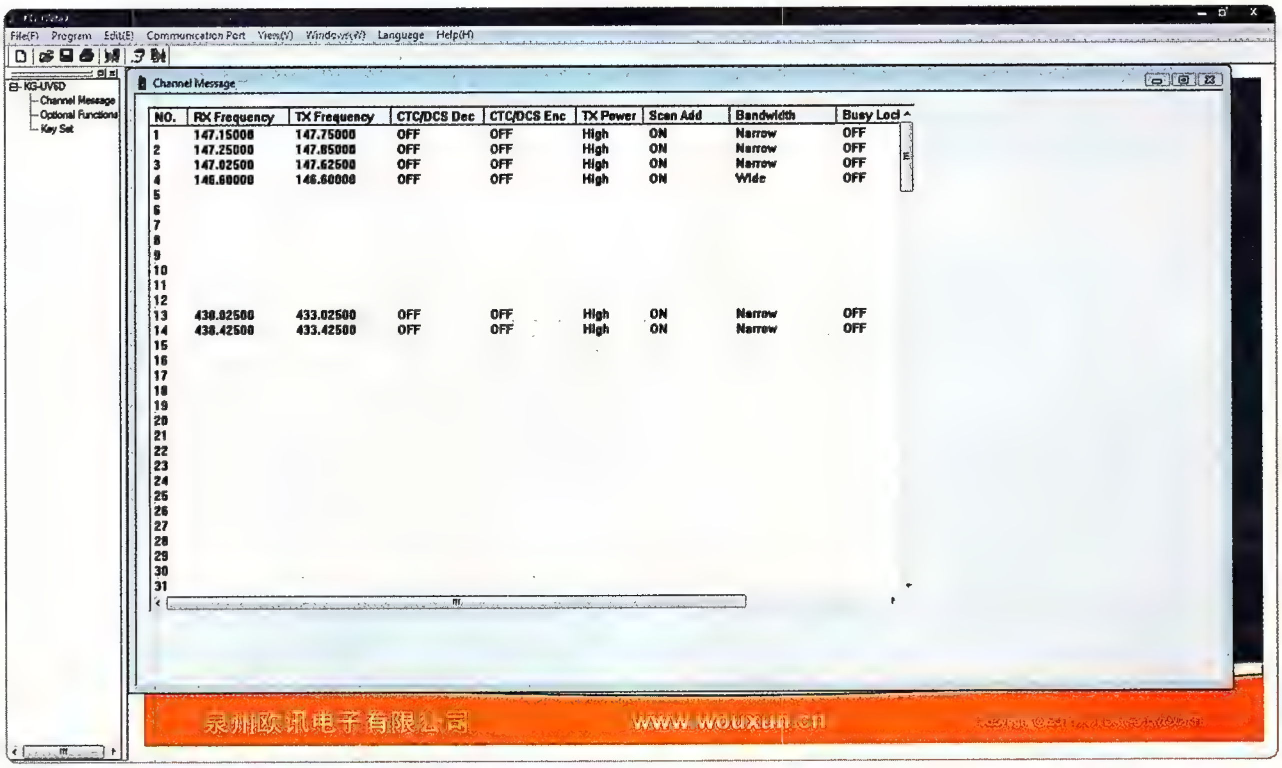
Photo 1: A close up of the KG-UV6D.

Photo 2: The transceiver in its charging stand.

The Wouxun company is one of the largest radio manufacturers in China and I understand they are about to seriously enter the amateur radio market with a number of models in the pipe line, something the big three manufacturers will certainly have to watch out for.

After ordering, the radio duly arrived safe and sound in a well packaged container via registered post; the package was double boxed so the radio box was in pristine condition. If purchased from Andrews Communications included is a small battery operated world clock. This is a handy edition to any shack, but sorry to disappoint the XYL there were no steak knives included.

In the box was the radio itself, antenna, 1700 mAh Li-ion battery pack, smart charger, 12 volt approved plug pack, belt-clip, hand-strap and user manual with warranty card packaged in neat moulded plastic surrounds. I also purchased the



NO.	RX Frequency	TX Frequency	CTC/DCS Dec	CTC/DCS Enc	TX Power	Scan Add	Bandwidth	Busy Lock
1	147.15000	147.75000	OFF	OFF	High	ON	Narrow	OFF
2	147.25000	147.85000	OFF	OFF	High	ON	Narrow	OFF
3	147.02500	147.62500	OFF	OFF	High	ON	Narrow	OFF
4	146.60000	146.60000	OFF	OFF	High	ON	Wide	OFF
5								
6								
7								
8								
9								
10								
11								
12								
13	438.02500	433.02500	OFF	OFF	High	ON	Narrow	OFF
14	438.42500	433.42500	OFF	OFF	High	ON	Narrow	OFF
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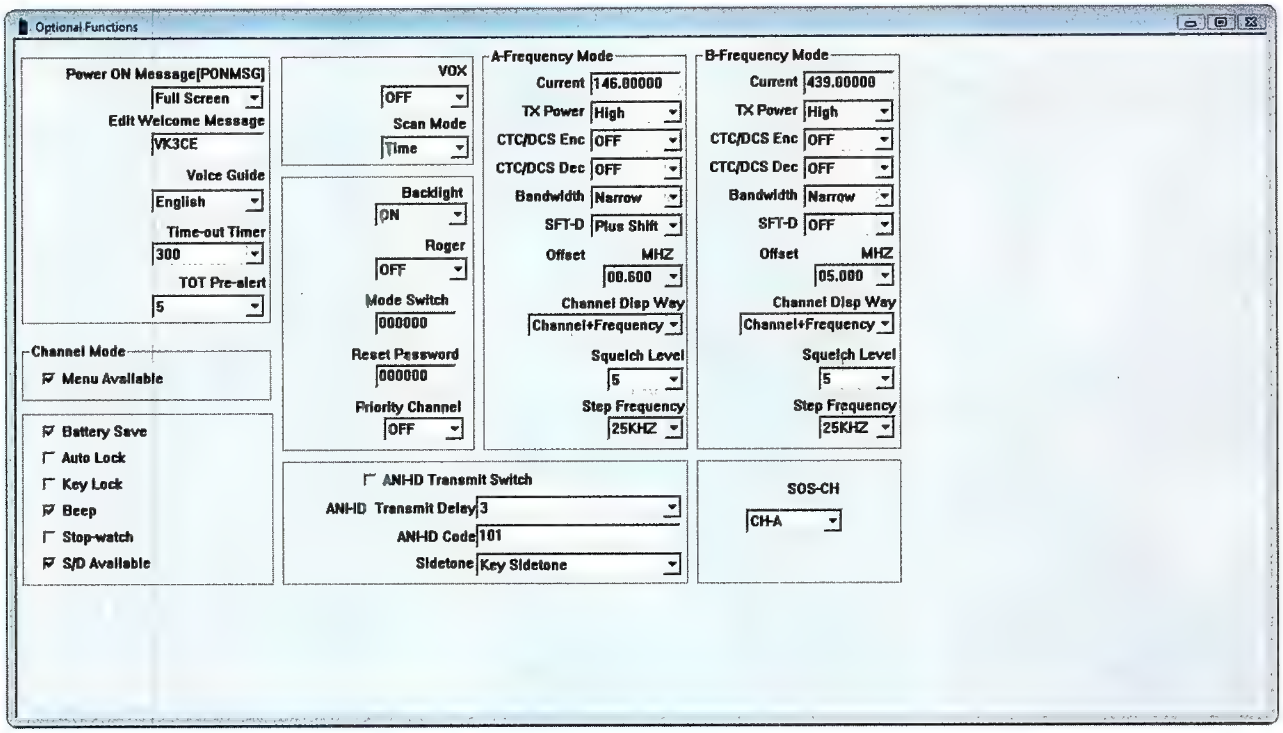
Figure 1: The frequency programming screen.

optional software and programming cable; more about this later.

After setting up the charger and waiting for the cycle to complete I duly turned on the rig for the first time and was immediately informed by a Chinese lady that I was in ‘frequency mode’. At this point she obviously knew more about the radio than I did.

I thought it about time to take a closer look. A quick translation of the Wouxun terms are that ‘frequency mode’ has VFOs on both receivers and ‘channel mode’ allows pre-



Power ON Message[PONMSG]: Full Screen
Edit Welcome Message: VK3CE
Voice Guide: English
Time-out Timer: 300
TOT Pre-alert: 5

Channel Mode
☑ Menu Available

☑ Battery Save
☐ Auto Lock
☐ Key Lock
☑ Beep
☐ Stop-watch
☑ S/D Available

VOX: OFF
Scan Mode: Time

Backlight: ON
Roger: OFF
Mode Switch: 000000
Reset Password: 000000
Priority Channel: OFF

A-Frequency Mode
Current: 146.00000
TX Power: High
CTC/DCS Enc: OFF
CTC/DCS Dec: OFF
Bandwidth: Narrow
SFT-D: Plus Shift
Offset MHZ: 00.600
Channel Disp Way: Channel+Frequency
Squelch Level: 5
Step Frequency: 25KHZ

B-Frequency Mode
Current: 439.00000
TX Power: High
CTC/DCS Enc: OFF
CTC/DCS Dec: OFF
Bandwidth: Narrow
SFT-D: OFF
Offset MHZ: 05.000
Channel Disp Way: Channel+Frequency
Squelch Level: 5
Step Frequency: 25KHZ

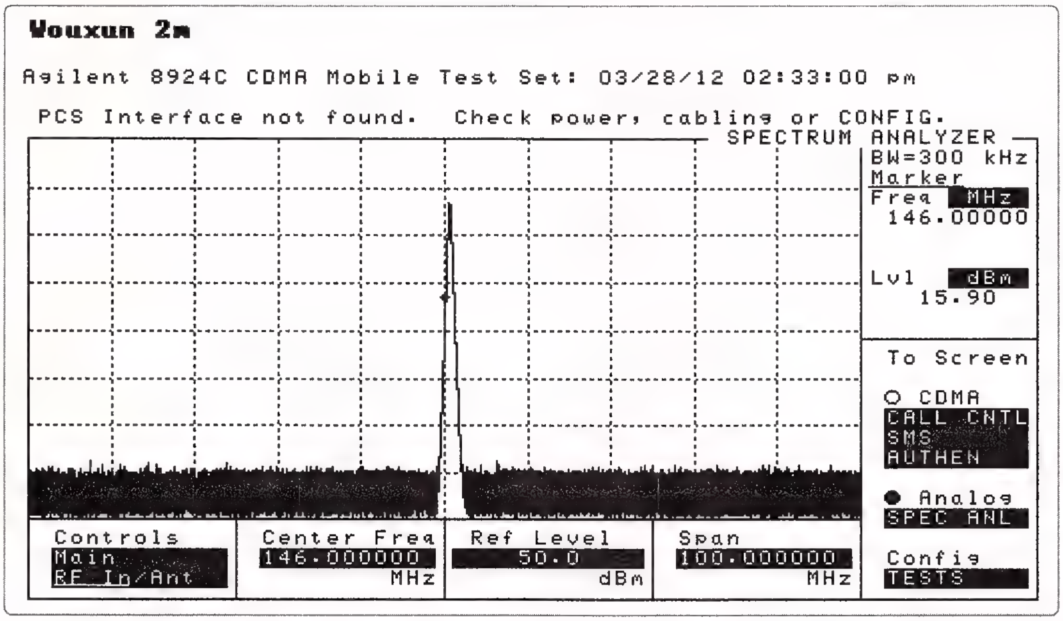
☐ ANI-ID Transmit Switch
ANI-ID Transmit Delay: 3
ANI-ID Code: 101
Sidetone: Key Sidetone

SOS-CH: CH-A

Figure 2: The Options setting screen.

programmed memories on both receivers. The radio is of solid construction and fits easily into the palm of your hand; on the top there are two control knobs, the right hand being a volume control and on/off switch. The centre control is a rotary encoder and serves two functions, frequency change in normal mode and function selection when in programming mode; on the left is the SMA connector for the whip antenna. There are two green and one red push buttons around the speaker escutcheon. The top green is labelled 'RPT' and by default cycles through the repeater offsets, and which is described in the handbook as a multifunctional key - more about this later. The lower green button selects either A or B channel to transmit on. The red button selects either single or dual band operation, and when in single band mode the alternative channel display comes up with the Wouxun model number.

Down the left hand side of the radio are the PTT button followed by two buttons, the first described as 'PF1' by default enables the FM broadcast radio band receiver and the second turns on a high intensity LED mounted in the top of the radio so as to act as a flashlight. On the right hand side there are jacks for the optional speaker microphone and these also double for the PC interface cable. As with most modern H/H there is no squelch pot as this is a preset function accessed through the menu key; the default level was set to five and this setting was used during the sensitivity test.


Wouxun 2m

Agilent 8924C CDMA Mobile Test Set: 03/28/12 02:33:00 pm

PCS Interface not found. Check power, cabling or CONFIG.

SPECTRUM ANALYZER
BW=300 kHz
Marker
Freq MHz
146.00000
Lvl dBm
15.90

To Screen
○ CDMA
CALL CNTL
SMS
AUTHEN
● Analog
SPEC ANL
Config
TESTS

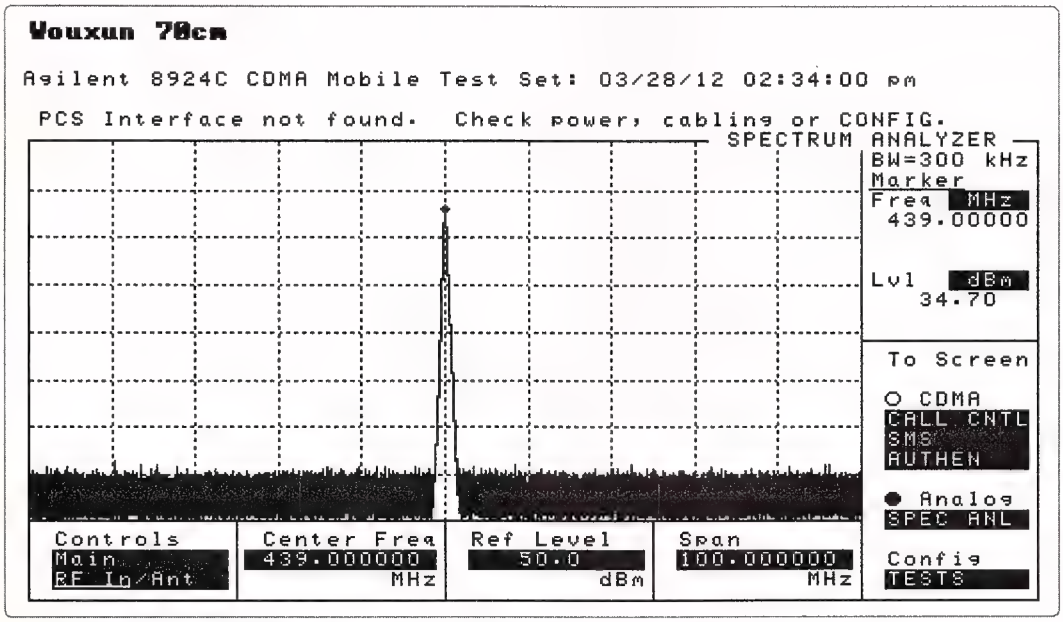
Controls
Main
RF In/Ant

Center Freq
146.000000 MHz

Ref Level
50.0 dBm

Span
100.000000 MHz

Figure 3: The transmitter output spectrum for 2 m.


Wouxun 70cm

Agilent 8924C CDMA Mobile Test Set: 03/28/12 02:34:00 pm

PCS Interface not found. Check power, cabling or CONFIG.

SPECTRUM ANALYZER
BW=300 kHz
Marker
Freq MHz
439.00000
Lvl dBm
34.70

To Screen
○ CDMA
CALL CNTL
SMS
AUTHEN
● Analog
SPEC ANL
Config
TESTS

Controls
Main
RF In/Ant

Center Freq
439.000000 MHz

Ref Level
50.0 dBm

Span
100.000000 MHz

Figure 4: The transmitter output spectrum for 70 cm.

There are 32 menu functions which are accessed by pressing the red 'menu' button and then rotating the function knob on the top of the radio. Once the desired function is selected options can be accessed by pressing the red 'menu' key a second time. The function options can now be cycled through by using the arrow keys on the keypad. Once the desired option is displayed just press the menu button again for the option to be stored in memory - pressing exit returns to radio mode.

As with most hand held radios these days the manual system can be confusing to navigate on the radio itself. The Wouxun is no exception to this but after a few minutes I found it easy to set most options although programming memories was a little confusing at first. If you need to program more than two or three memories on any hand held radio, I think it is better to try and get hold of programming software when available.

As I said earlier the radio has a 76-108 MHz broadcast band receiver built in which can be enabled by pressing the 'PF1' button on the left hand side of the radio. Depending on which receiver is active the FM band will appear on the currently non active side, however when using the FM receiver the radio will instantly return to the original frequency if there is any activity on it. While receiving the FM broadcast band this effectively gives you three receivers, a nice feature.

I purchased the software and programming cable at the same time and found it a simple installation as the XP/Vista/Win7 drivers were included on the installation disk. The PC found the 'new hardware' and installed the appropriate driver. The actual program is a single executable and can be saved to any directory on your PC, and as the interface is a USB device it will work on any modern laptop as well. As can be seen from the accompanying photos all functions including memory channels, offsets, CCTSS frequencies and so on can be entered and saved on your PC and downloaded to the radio as can the various functions. The 'RPT' key as well as the 'PF1' button can be reassigned functions. By default the 'RPT' key selects repeater offsets, but I found it easier to reassign this key to select either memory or VFO.

This makes it a simple single key stroke to change modes, remembering that on the Wouxun it is only possible to be in dual VFO or dual memory mode. It is not possible to have a memory channel and a VFO selected at the same time although it is possible to have VHF/VHF, VHF/UHF or UHF/UHF combinations selected in either memory or channel mode.

On air tests resulted in very good recovered audio through the small internal speaker both with simplex and repeater contacts. I received glowing reports of the quality of the transmitted audio equalling or surpassing many other hand-held radios in its class. The battery lasts for several hours of use

Photo 3: The KG-UV6D compared to some other modern handheld transceivers.

and the Chinese lady announces in no uncertain terms when it is time to recharge the radio, which is achieved quickly. The size of the radio compares favourably to most and I prefer the slightly larger than normal buttons which makes it easier for someone with large fingers (like me) to navigate.

The Wouxun is a fantastic little radio and with the included accessories presents great value for money and I think the 'big three' manufacturers will ultimately have some serious competition to contend with as Wouxun releases more models. The only negative that I can see with this model is its inability to have memory channels enabled on one receiver and a VFO on the other.

I look forward to reviewing more of the Wouxun range as they become available in Australia.

Tests were conducted using the following: HP8924C radio test set, Bird 43 power meter and the Marconi TF2304 modulation meter.

The radio is available in Australia from Strictly Ham and Andrews Communications Systems.

Test Results

Output power VHF	5.5 watts
Output power UHF	3.5 watts
Deviation	2.5 kHz
Spurious radiation	See charts
VHF sensitivity (Mute Opens)	0.19 mV
UHF sensitivity (Mute Opens)	0.269 mV
Price	$169.00
Optional Software & Cable	$29.00

The Wouxun specifications at a glance

- Dual alpha numeric, back lit display with channel name edit
- Selectable high/low power settings (VHF: 5 W high/2 W low) (UHF: 4 W high/2 W low)
- High capacity1700 mAh Li-Ion battery is standard
- Includes intelligent desktop rapid charger (three-four hour)
- Audio output 500 mW
- Built in LED flash light
- Meets IP55 waterproof standard
- Voice prompts (can be turned off)
- 199 memory channels (shared)
- VOX Function
- Digital FM radio (76-108 MHz) with automatic tuning and storing, radio frequency display, 18 FM memories in two banks
- Wide/narrow bandwidth selection (25 or 12.5 kHz)
- Power on display: show battery voltage, 6-character customisable welcome message, or display test
- Windows PC programmable
- Radio to radio cloning with optional cable
- Same channel: VHF TX and UHF RX or UHF TX and VHF RX available
- 105 groups DCS/50 groups CTCSS
- DTMF encoding (includes ABCD tones, continuous while buttons are pressed)
- CTCSS encode/decode (no decode delay)
- Stopwatch function
- SOS function (man down alarm)
- Low-voltage warning by voice prompt
- Busy channel lockout
- Selectable TOT (from 15 to 600 seconds)
- Channel step 2.5, 5, 6.25, 10, 12.5, 25, 50 or 100 kHz
- Multiple scan modes including priority scan
- Keypad lock (auto or manual)
- High contrast white back lit keypad. All keys are back lit (except A/B, S/D and RPT)
- Frequency Range: (RX) VHF: 136-174 MHz, UHF: 420-470 MHz, (RX) FM: 76-108 MHz
- Operating Voltage: 7.4 Volt DC

Silent Key

David Stanley Rostan VK5JDR

David Rostan, or 'Davo' as he was known to his friends and family, passed away peacefully on 14th October, 2012 due to heart problems, at age 78 years.

He spent 43 years as a member of the South Australian Police Force. Original interest in radio began with 27 MHz CB, where he became a member of the Port Adelaide Radio Club. In 1993 he became VK5LDR with a Novice licence.

He qualified for his AOLCP in 1995 and in 1998 became VK5JDR.

He was a very active member of Albatross Radio Australia (Life Member) and enjoyed extensive caravan touring with wife Loris. Along the way he made many contacts and kept in touch with family.

He was an inspiration to all with his devotion to family and his ability to understand whatever he set his mind to.

Davo will be missed dearly; he leaves his wife Loris, daughter Julie and husband Mark, son Andrew and wife Heather and four grandchildren Jim, Emily, Ethan and Paul.

Dear old Dad, I always cherished our contacts on IRLP Node 6214.

73. Andrew Rostan VK5LAR - 'Always in our Hearts.'

Hendricks QRP Kits PFR-3A

Ray Buck VK4ZW

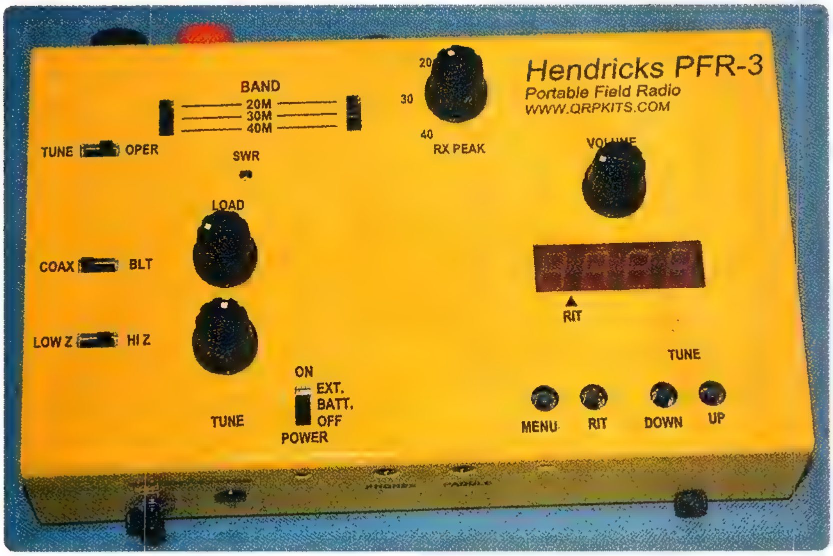


Photo 1: The PFR-3A viewed from above.

I am a keen QRP operator and have built a number of kits to support this passion. Earlier this year Grant VK4JAZ, another keen QRPer, told me that he was keen on building a multiband QRP radio, mainly for CW operation. He was looking at the Elecraft K1 and the Hendricks PFR-3A - *http://www.qrpkits.com/pfr3.html* – the PFR stands for Portable Field Radio. After some discussion Grant opted for the Hendricks kit. He made some enquiries with Doug Hendricks and found that the cost of postage for two kits was the same as for one and he asked me if I was interested. I hadn't been thinking of any new QRP radios as I thought I had enough (can you ever have enough?) however the ongoing discussion with Grant had whetted my appetite and so I eagerly said yes. The kit was designed for Doug Hendricks by Steve Weber KD1JV, who has an awesome reputation for the design of quality kits.

The specifications for the PFR3-A are as follows:

- Bands : 40 metres, 30 metres and 20 metres.
- Tuning range: Full band coverage.
- Mode: CW only.
- Power supply: internal AA batteries or external supply. The PFR-3A rig is designed to be powered by no more than about 12 volts and no less than eight volts.
- Receiver MSD: 0.2 µV typical.
- Selectivity: 300 Hz.
- Receive current, no signal typical:
  - Active, 47 mA.
  - Idle, 34 mA.
- Transmitter:
  - five watts at 12 volts, all bands.
  - Spurs: -50 dBc maximum, all bands.
- Five to 35 wpm internal iambic keyer.
- Two (2) 63 character keyer memories.
- Coax or balanced line output.
- Built in BLT (balanced line tuner).

An accessory previously offered for the kit was a screw-on paddle assembly which has been discontinued. This was not an issue for either Grant or me as we prefer to have a paddle or key that is not attached to the housing. You can see the benefits for portable use of the screw-on paddle however as the paddle looked quite small and easy to connect to the PFR-3A case.

The kits arrived in due course and Grant and I started on the build. The PFR-3A page on the Doug Hendricks QRP Kits website includes a downloadable Production Manual and a Decal Installation Instruction guide. The Production Manual is quite detailed and includes a step-by step build for the PFR3-A including a complete parts list that can be used to check all components when received.

Photo 2: The PFR-3A viewed from the front.

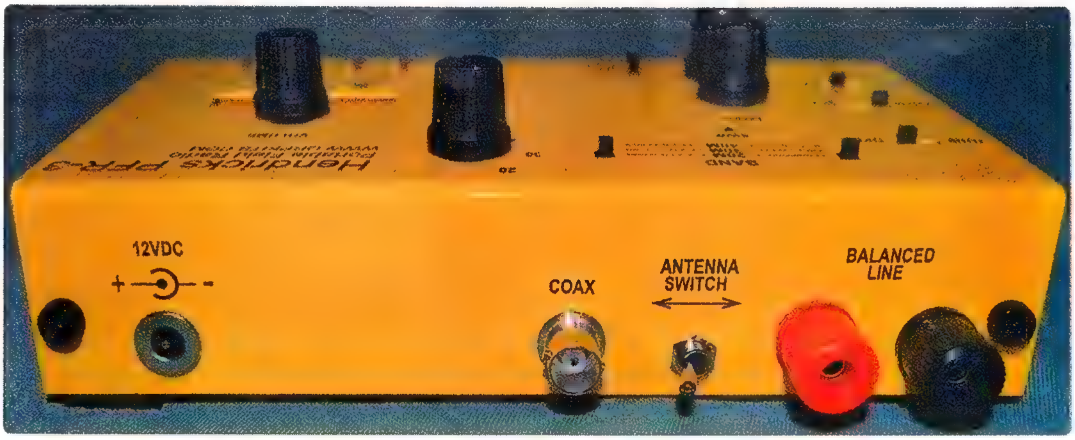


Photo 3: The PFR-3A viewed from the back.

As with all kits the first step is to check that all components and parts have been supplied. Grant and I found some parts missing. A quick email to Doug and the parts were on their way. The kit includes all components:

- a printed circuit board with the surface mounted devices for the RF Oscillator and Direct Digital Synthesiser pre-soldered on the board,
- all hardware,
- decals, and
- enamel coated enclosure with pre-drilled holes and slots.

Grant and I also ordered the Battery Status Indicator - *http://www.qrpkits.com/bsi.html* - as this seemed the most effective way to monitor the internal battery status in the field. This kit comes with mounting instructions for the PFR-3A but there are no pre-drilled holes in the enclosure.

There are five stages of construction in the following order:

- Microprocessor and display.
- Receiver.
- Transmitter.
- Low pass filter.
- SWR bridge and balanced line tuner.

Each stage is quite easy to construct and the testing required is comparatively easy; a frequency counter and cathode ray oscilloscope are suggested test equipment in addition to the ubiquitous multimeter.

The construction can be accomplished without these but the accuracy of the receiver will be compromised. There are two errors on the printed circuit board design that require a jumper and capacitor to be soldered to the non-component side of the board. Power output is governed by the voltage supply (maximum 12 volts) and the spacing of the transmitter low pass filter coils around the cores.

As with all kit construction care must be taken when soldering components and the old saying of 'measure twice, cut once' still holds (that is, double check all components for correctness before installation).

Installation of the decals on the housing is quite tricky and Doug Hendricks includes two sets of decals and believe me you will need them as the decals are quite fragile. Once installed and with a couple of coats of clear varnish the housing looks very professional.

Operation

Band selection is made using two slider switches. This was obviously a compromise made during the design of the kit. The two sliders are required to be in the appropriate positions for correct operation. The frequency is varied by two push button switches: one for increasing the frequency and one for decreasing the frequency. There is an RIT function controlled by a push button switch next to the frequency switches.

Straight key or paddle can be used. If a monaural plug is inserted in the key socket prior to power-up the rig is automatically set for straight key mode.

There is a menu push button switch to access various keyer functions such as send message, change keyer speed, TUNE mode, and enter messages and select iambic A or B mode of operation.

The inbuilt Balanced Line Tuner (BLT) is the same as offered in kit form by Doug Hendricks (BLT Plus http://www.qrpkits.com/blt_plus.html. The tuner will tune balanced and unbalanced antennas. The BLT can be switched out if using a tuned antenna or external antenna tuner.

Grant and I finished our kits within a couple of days of each other. Grant and I have had great success with the PFR3-A. Grant quickly made a QSO into North America and one with RA1AIF/MM, a Russian container ship captain in the South China Sea on 20 m, both QRP. I made some local VK2 and VK3 contacts as well as one from Brisbane to Invercargill on the first night of operation, with Robin ZL4IG. In September /October 2011 I spent some time in London where I used a 1/4 wave on 40 (the BLT easily tuned the antenna to the 30 m and 20 m bands) from a first story window down to a fence and with counterpoise hanging out of the same window. I made numerous contacts into Europe on four watts or less (as the batteries ran down) on all of the bands.

All-in-all I am very pleased with the kit, as is Grant, and believe it represents great value for money and is a great QRP portable rig.

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Don Jackson VK3DBB

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Assessment of the use of higher transmitter output power by amateur advanced licensees

Peter Young VK3MV

The ACMA recently commenced its assessment of the trial of the use of higher transmitter output power by advanced licensees. The ACMA had previously foreshadowed it would assess the impact of the higher power authorisation when the trial was originally announced in February 2012.[1]

As part of the trial assessment process, the ACMA is undertaking a desk-based audit to assess licensees' compliance with their electromagnetic energy (EME) obligations. Licensees are reminded that the EME requirements can be found in Part 3 of the *Radiocommunications Licence Conditions (Apparatus Licence) Determination 2003*.

The ACMA advises that 251 licensees had obtained the higher power authorisation as at 18 December 2012. The ACMA will contact a sample of licensees drawn at random based on spectrum density as part of the desk-based audit process.

After reviewing the written documentation provided by a licensee, the ACMA may conduct a site audit. This might occur where the documentation provided by the licensee requires clarification or where the licensee has failed to provide the documentation within the statutory timeframe. The ACMA has confirmed it will contact a licensee in advance if there is to be site audit. It is not necessary for licensees to contact the ACMA for progress reports or to ask if their station will be the subject of a site audit.

The ACMA has highlighted to the WIA that it considers the information on the ACMA's website sufficient for licensees to undertake an appropriate EME assessment. For all the relevant information go to the ACMA's webpage, 'Guidelines for assessing fixed transmitters'.[2]

To further assist licensees in responding the ACMA's request for EME documentation, Frequently Asked Questions of a general nature have been developed and are on the ACMA website. Because of the nature of the amateur service, the FAQs cannot address every site or station permutation, but they do provide some helpful pointers.

In assessing the trial overall, the ACMA will also review any relevant interference related complaints and look at other information to do with amateurs' use of higher power in different countries as well as Australia. The ACMA has noted that as an evidence-based regulator it seeks to make sure that its assessment of the trial is transparent and takes account of all input from interested stakeholders.

(Endnotes)

1 *www.engage.com.acma.gov.au/advanced-amateurs-to-trial-higher-power/*, viewed 18 December 2012.

2 *http://www.acma.gov.au/WEB/STANDARD/pc=PC_1833*, viewed 18 December 2012.

Get Involved with your WIA - Assistant Treasurer Required

The WIA needs an **Assistant Treasurer** to assist John Longayroux VK3PZ in looking after the financial affairs of the Institute.

Ideally you would live in the wider Melbourne area, have some corporate or not-for-profit experience and be proficient in MYOB or other computer-based accounting systems, and naturally have some spare time to devote to the WIA.

If you are able to assist John with the preparation of our yearly budget and quarterly financial reports, and also happy to attend occasional meetings, we need to hear from you.

I would like to say that this is a paid position and full of all sorts of perks and benefits. Sorry! But you will be involved with a great group of people all working for amateur radio and, although deadlines have to be met, the position is not too demanding.

If you believe you can help the WIA in this aspect of its work, please send an email with a brief outline of your qualifications and experience to *president@wia.org.au*

Looking forward to hearing from you.

Phil Wait VK2ASD
President

ALARA

Margaret Blight VK3FMAB – Publicity Officer

Here we are in 2013 already. Hope those New Year Resolutions are still in place. As an aid to those of you who have not been so active on radio in recent months, the following information may give you some encouragement to renew your interest in amateur radio. There is also an opportunity for anyone interested in becoming involved to make contact with ALARA to learn more about the hobby.

ALARA's mission is to encourage women's interest and active participation in amateur radio.

ALARA was formed in 1975 by a small group of Australian ladies interested in amateur radio. Membership has now grown to over 200, with many Australian members sponsoring overseas YLs into ALARA. The term 'YL' stands for 'young lady' – regardless of age.

Membership

There are a range of membership options for joining ALARA or receiving the ALARA newsletter. You can even sponsor overseas friends into ALARA and become a member of a DX association in return.

ALARA - Office bearers and contacts

President

Jean Fisher VK3VIP
jeanfisher@optusnet.com.au

Photo 1: The ALARA badge.

Secretary

Jean Kopp VK5TSX
vk5tsx@bigpond.com

Senior Vice-President

Tina Clogg VK5TMC
vk5tmc@internode.on.net

Treasurer

Catherine Hammond VK4GH
vk4gh@wia.org.au

Publicity Officer

Margaret Blight VK3FMAB
margovk3@iprimus.com.au

Meetings

Meets ON-AIR 3.580 MHz +/- each Monday at 1030 UTC (1000 UTC during daylight savings).

The ALARA Contest is always held over the last full weekend of August.

Club contact details: Australian Ladies Amateur Radio Association, 9 Armiston Grove, Wantirna South. Vic. 3152.
Phone 03 9801 3612 - *http://www.alara.org.au*

ALARA radio contact

Net	Day	Time	Frequency
ALARA	Monday	1030 UTC	3.580 MHz +/-
		1000 UTC (DLS)	
YL222 DX	Monday	0530 UTC	14.222 MHz
YL Activity Day	6th of month	Listen on hour and call 'CQ YL'	14.288 MHz 21.188 MHz 28.588 MHz
Birthday Net	4th Saturday July	1000-1200 UTC	3.588 MHz +/-

ALARAmeet

ALARAmeet is a wonderful way to meet other YLs in our organisation and their OMs are welcome too. Approximately 80 people attend our meets now and YLs have come from England, Sweden, America, Germany and a big group from New Zealand.

ALARAmeet 2014

Planning is underway for the next ALARAmeet in beautiful Nelson Bay NSW, from 24th to 27th October, 2014.

Contests

The ALARA award is available to YLs, OMs and SWLs contacting ALARA members on or after 30th June, 1975. All licensed operators throughout the world are invited to participate.

VK3 news

The final ALARA lunch for 2012 was held at Gisborne, hosted by Pam VK3NK aided by her OM Graeme VK3NE. The lunch had a Christmas theme and everyone was encouraged to bring a small Kris Kringle gift. Although the day started out with a cool wind, the sun finally won through and we all enjoyed a period of intense sunshine. Very helpful when taking the obligatory group photo!

The barbeque offered tasty meats and there was a wide variety of salads to choose from. Everyone ate well but managed to find sufficient energy to participate in the range of sweet dishes that were available. Afterwards, following the exchange of gifts, there was little else to do but relax in the sunshine. A fitting conclusion to the year's social events.

VK5 news

Christine VK5CTY attended the annual Adelaide Hills Amateur Radio

Photo 2: From the left, Jean VK3VIP, Jenny VK3WQ, Susan VK3UMM, Pamela VK3NK, Elaine VK3EQY, Margaret VK3FMAB, Muriel and Wendy.

Sale and together with other ALARA members worked the kitchen sales to raise funds. They had a very successful day.

Silent Key

Kathy Gluyas VK3XBA, a long-time member of the EMDRC club and an ALARA member since 2004, passed away in November, 2012. Kathy had struggled with a Parkinson's condition for quite some time but despite her poor health she continued to enjoy her radio contacts. She also undertook voluntary work checking the safety of electrical goods for an organisation.

Kathy was a member of the ALARA committee until fairly recently and held the position of Award Custodian taking a keen interest in encouraging operators to participate in contests and sending out certificates to those who took part.

Michael Owen

In 2006 at the 13th Regional conference of IARU Region 3 in Bangalore, India, five of us were elected directors, a completely new team. Michael, having the most experience in IARU matters, was the natural choice as Chairman.

Since all of us were new, it was decided that an additional director's meeting would be held in the first week of December to plan on what needed to be done.

Being new to IARU matters, Michael came to my room in Tokyo after dinner the day before the meeting, and took me through all the nuances of ITU regulations, the footnotes, and the process which was followed at WRC conferences.

I had some good whisky in the room and we shared a drink. Since then it was the done thing, after any meeting, for us to meet in his room or mine, sharing some whisky and recapping the events of the day at the meeting, and planning for the next day. This happened at every meeting we were together whether a director's meeting, an administrative council meeting or the conference in Christchurch.

Michael's knowledge on IARU matters was phenomenal and with this knowledge he was able to steer discussions towards a satisfactory conclusion which would have long lasting results.

He and I used to talk to each other on Skype almost every week, when he would use me as a sounding board for some of his ideas and we established a close working relationship.

I have taken over the mantle of Chairman of Directors and I do so in the full knowledge that it will be a tough task to follow Michael, as none of us have the far reaching knowledge he had. We all hope that we can guide the business of IARU Region 3 in a manner that would do justice to what Michael stood for.

Gopal Madhavan VU2GMN

DX-News & Views

Luke Steele VK3HJ & Chris Chapman VK3QB
vk3hj@wia.org.au & vk3qb@wia.org.au

December and January on the bands

The ZL9HR Campbell Island expedition filled the bands for ten days from 1 December. Early December also saw some decent higher band openings, with good conditions on 10 m and 12 m to Europe and the Middle East. There was also plenty of activity from the Caribbean area through December. Bob VP8LP was very active over this period, and was worked in VK3 on 17, 15, 12 and 10 metres.

Alex RI1ANC is active again at the Russian Vostok Antarctic base until 7 February. Norman E51E was very active on all bands from Aitutaki I, in the South Cooks. African expeditions 5T0SP Mauritania, and 7P8D Lesotho went well, and Namibia, Kenya and Rodrigues Island were activated. Christian J28NC has been on air from Djibouti.

After mid-December, the propagation seemed to decline somewhat, but the beginning of January saw rising solar indices, and very good conditions on all bands.

Some upcoming DX operations

The following table summarises some of the DX activations that may be of interest to VK operators.

Date	Call	QSL via	Information
February	5X8C	LoTW, or F1NGP	**Uganda.** F6KOP team of 20 operators, six stations, 160-10 m, for 12 days.
6 Feb – 25 Mar	J38RF	LoTW, or KE4TG	**Grenada**, NA-024. KE4TG, HF, mainly digital with some CW and SSB.
9-13 Feb	KH2/5B4AGN	M0URX	**Guam**, OC-026. 5B4AGN, 80-10 m, maybe 160 m
13- 23 Feb	V63ZM	M0URX	**Micronesia**. 5B4AGN, 80-10 m, maybe 160 m.
15-26 Feb	XV2DLH	DK8ZZ	**Vietnam**. Five German operators, from Mui Ne.
15-27 Feb	9U4U (pending)	OQRS, LoTW	**Burundi**. Nine operators, four stations, 160-10 m.
18-28 Feb	H44KW	G3SWH	**Solomon Is**, Guadalcanal, OC-047. 80-10 m CW.
21 Feb – 7 Mar	XT1T	OQRS	**Burkina Faso**. Italian DXpedition team. All bands, all modes.
22 Feb – 2 Mar	XT	via home calls	**Burkina Faso**. Japanese team, 80-10 m.
28 Feb – 10 Mar	TX5K	N2OO	**Clipperton Is**, NA-011. Cordell Expeditions, international team, all bands, all modes.

5X8C, **Uganda.** The F6KOP team plan to operate six stations, with more than 20 operators, 160-10 m, for 12 days in February. QSL via LoTW, OQRS, or via F1NGP direct or bureau.

J38RF, **Grenada.** 6 Feb-25 Mar. Roy KE4TG will be in Grenada, on HF, mainly on digital modes, but may also operate some CW and SSB. QSL via KE4TG.

KH2/5B4AGN, **Guam.** 9-13 Feb. Bob 5B4AGN, will be operating 80-10 m, high power. He may also operate on 160 m. Bob will then travel to Micronesia. QSL via M0URX.

V63ZM, **Micronesia.** 13-23 Feb. Bob 5B4AGN, 80-10 m, high power. QSL via M0URX.

XV2DLH, **Vietnam.** 15-26 Feb. DK7PE, DH6ICE, DH0RAK, DK7TF and DK8ZZ plan to operate from Mui ne. QSL via DK8ZZ.

9U4U, **Burundi.** 15-27 Feb. Nine operators, four stations, 160-10 m. Special effort for 80 m and 160 m. QSL via OQRS, LoTW, or M0URX direct. *http://www.9u4u.be/*

H44KW, **Solomon Is.** 18-28 Feb. Phil G3SWH and Jim G3RTE will be operating from Honiara, 80-10 m, CW. QSL via OQRS, LoTW or G3SWH direct. *http://www.g3swh.org.uk/h44kw.html*

XT1T, **Burkina Faso.** 21 Feb-7 Mar. The Italian DXpedition team who recently activated TT8TT Chad, will be on air for 15 days, all bands, all modes. QSL via OQRS. *http://www.i2ysb.com/idt/*

XT, **Burkina Faso.** 28 Feb-2 Mar. A Japanese team is also scheduled to operate around the same time as the Italians. Operators listed are: JA1CJA as XT2CJA, JA3IVU as XT2IVU, JH3AEF as XT2AEF, JA3VWT as XT2VWT. They plan to be on 80-10 m, CW SSB and digital modes. QSL via home calls.

TX5K, **Clipperton Is.** 28 Feb-10 Mar. Cordell Expeditions, a large multi-national team of radio operators and scientists will travel to Clipperton Island for the purposes of the DXpedition and scientific research. QSL via N2OO. *http://www.cordell.org/CI/*

Working the DX

We mentioned some months ago that we would like to introduce topics related to DX other than a simple listing and description of what's coming up and what's recently been activated. We welcome your thoughts and requests. This month we'll start with HF DX chasing and how to work that rare station. Whilst there is considerable science, operating skill and experience that goes into successful DXing, one needs to understand it is an art.

Probably the first decision is to decide how serious you are about DXing and what equipment you have available to you. It has been said many times that DX can be worked with five watts and a piece of wet string, and whilst this statement is true, any operator wishing to undertake a serious effort at working DXCC or breaking through a pileup will quickly become frustrated with the five watts and the piece of wet string! Below we introduce some basic principles to successful DXing.

1. Have Fun

Perhaps the most important criteria is that we approach DXing as a fun activity – remember, this is a hobby! Sure, an element of competition and technical achievement adds to the satisfaction, but if you are not having fun then perhaps it is time to revisit why and how you are approaching the art of DXing.

2. Basic Equipment

As many ardent HF DXers will attest, one never has enough equipment, antennae are never high or large enough, and one could always do with a little more power. Having said that, excellent results can and are achieved with a reasonably modest HF radio, a dipole and some form of directive beam for the higher bands. In future articles we will describe some examples of radios and antennae that are more than adequate for a successful DXing experience. Suffice to say, an $800-$1,000 HF radio with 100 watts, a home-made dipole and a beam (total budget of $500 or less for antennas) will enable a skilled operator to work the world and match the top end stations nearly every time. In summary, $1,500-2,000 is more than enough to put together a station capable of working DXCC within 12 months and breaking through the pileups with the 'big guns'. Albeit with a little more patience and persistence!

3. Basic Listening skills

Without a doubt, the most important skill the DXer needs is that of listening. Sadly, we are losing this skill with the introduction of the internet and DX-clusters. Many people expect to turn the radio on, fire up the computer, check the DX-cluster and then just work 'that rare station'.

Spend time listening to the band. Whether your passion is SSB, CW or digital modes, stop and listen to every signal. This way you will build experience in propagation, operating techniques and operator behaviour. We'll talk more about basic operating skills in future months; however, in the meantime, spend time listening to DX, especially DXpeditions and good operators. A large part of the experience of DXing should be listening to the bands and hunting down the rare and elusive DX. Unfortunately, too often we hear inappropriate operating behaviour, quite often nothing more than a result of poor listening and/or lack of experience and sound operating principles.

4. Pile-ups

Don't call the DX blindly. Consider their end of the circuit. Here you will have (hopefully) an experienced operator who understands he is sought after – that is, many, many stations will be hoping to work him. Almost as soon as he goes on air he will be hounded by dozens, maybe hundreds of operators most of whom will want a simple QSO with nothing more than a simple confirmation of the contact, followed by a QSL. A traditional '59/9, thanks for the new one, 73'. As a DXer chasing this guy, stop and consider - are they working split frequency? The DX operator will usually be operating split frequency, as this mode of operation keeps his transmission frequency clear of QRM and what may be hundreds of stations all calling at the same time on the same frequency. He will usually listen up 5-10 kHz and may move his receiving frequency around in order to pick a clear station that he can copy. Learn his pattern.

Is he listening for North America (NA), Europe (EU), Africa (AF) or Oceania (OC)? A skilled and experienced DX operator will have a pattern – listen and learn his pattern and work with it. It is far more satisfying to learn the DX operator's pattern and work him knowing this, than to fire off your callsign randomly in blind hope you will be heard. Further, this only adds to the QRM and frustration. Above all else, respect the DX operator and his instructions. He will almost certainly know he has a big pileup and will be working hard to work as many stations as possible with consideration for propagation and a sense of fair play.

There are many very good books and web sites that provide a great reference and guidelines to assist in building your HF operating skills. But nothing beats on-air listening, mentoring from more experienced operators and of course old fashioned experience. Some references are listed here:

The Complete DX'er by Bob Locher W9KNI – this is easy and entertaining reading whilst at the same time offering a well-honed insight into DX chasing by a well-respected DXer. This book can be purchased from a number of on-line stores – type the title or author into your favourite search engine.

DX code of conduct: *http://dx-code.org*

This web site offers a wealth of good operating guidelines and principles. Take the time to visit this site. On the site there is also a DXpeditioner's Code of Conduct. As a chaser, this is worth a look, and mandatory if you choose to be the DX!

The DX code of conduct

I will listen, and listen, and then listen again before calling.

- I will only call if I can copy the DX station properly.
- I will not trust the DX cluster and will be sure of the DX station's call sign before calling.
- I will not interfere with the DX station nor anyone calling and will never tune up on the DX frequency or in the QSX slot.
- I will wait for the DX station to end a contact before I call.
- I will always send my full call sign.
- I will call and then listen for a reasonable interval. I will not call continuously.
- I will not transmit when the DX operator calls another call sign, not mine.
- I will not transmit when the DX operator queries a call sign not like mine.
- I will not transmit when the DX station requests geographic areas other than mine.
- When the DX operator calls me, I will not repeat my call sign unless I think he has copied it incorrectly.
- I will be thankful if and when I do make a contact.
- I will respect my fellow hams and conduct myself so as to earn their respect.

Next month we will touch on DXpedition funding – what does it cost to put on a major DXpedition? Where does the money come from? In future months we'll return to the basics of building a simple but effective HF DX station and developing skills in working the DX. Until then, good DX and, as always, please drop either of us a note with your comments or questions.

73 es gud DX.

WYONG FIELD DAY

Proudly presented by Central Coast Amateur Radio Club Inc

24th February 2013

Gates open 6.30 am – Traders & Exhibitors open 9 am

Free shuttle bus from Wyong station

Lucky gate prizes, Raffle, Lectures, Flea Market and so much more!

See you at the largest amateur radio gathering in the Southern Hemisphere!

Entry $15 - 17yrs and under admitted free

For more information - www.fieldday.org.au

VK2 news That was 2012 in the CCARC

Ed Durrant VK2JI and Rod Jarman VK2LAX

A review of activities in the Central Coast ARC over the year

As we look forward to 2013, it's good to look back at what happened in the Central Coast ARC in 2012. This was the 55th year of what was originally the Gosford ARC. To celebrate the 55 years, the Central Coast Award was resurrected for the last quarter of the year.

The year started as it always does with final preparations for the Wyong Field Day, the largest assembly of radio amateurs in the Southern Hemisphere, which in February ran like clockwork thanks to the effort of members organising and running the event. The numbers attending were down very slightly on the previous year, although there are always fluctuations from year to year and we hope to be up again in 2013. Preparations are well under way with some interesting additions to the program for 2013.

During the year several training courses and exams were held and a total of nine candidates were successful, three new Foundation licensees and six Standard licence qualifications were achieved, partially accounting for the seven new club members for the 2012-2013 year.

The AGM in August saw a change of leadership in the club committee, with those who have led the club for the last few years staying within the committee but giving some younger members the reins to steer the club forwards.

Over the last couple of years maintenance work on both our Kariong club rooms and Somersby repeater site have taken place and 2012 saw the extension at Somersby completed allowing the new six metre repeater and a digital APCO25 70 cm repeater to come online along with the re-arrangement of some equipment within the building, the installation of a workbench and the addition of a concreted parking area. Following the re-painting of the walls at the Kariong club rooms, the radio room gained a new carpet, which stopped the acoustic 'ringing' that we had with the bare wooden floor, making operation in the room a pleasure.

Radio equipment was also improved in several areas:

1. a new Alinco six metre transceiver was bought to upgrade the six metre repeater receiver.
2. a new two metre long Yagi antenna was installed for SSB work.
3. the existing tri-band HF beam antenna was raised a few meters higher on the mast.
4. a new dipole for the 30 metre band was put up.
5. to complement the Kenwood TS-590S bought last year an ACOM 1000 linear was purchased and installed.
6. for 2 m/70 cm and satellite operation, an Icom IC-910H transceiver was purchased and installed.
7. for portable operation and public events, a ruggedised HF-6 m transceiver, an Icom IC-7200 was purchased.

On the event and contest front the club took part in the following events during the year:

1. The International Lighthouse and Lightship Weekend (ILLW) at Nobbys Head lighthouse in Newcastle. This year we gained access to use one of the lighthouse keeper's cottages rather than having to operate in the winds and rain as we did in 2011. This was a combined effort with the HARAOA this year.
2. From the club rooms we took part in the Remembrance Day, Oceania DX, CQWW DX and John Moyle contests. The CCARC now sponsor one of the plaques in the OCDX contest.
3. From portable locations the club took part in the VHF-UHF Field Days and the John Moyle contest (the club operated this one as portable and home station); both stations came second in their respective sections - maybe next year…
4. As with previous years, the club also supported the East Gosford Scouts in the annual Jamboree on the air (JOTA) event.

The club's website at *ccarc.org.au* underwent some changes and additions gaining displays of both QSL cards from stations worked by the club stations, certificates obtained by the club over the years and some historic photos. The club calendar (Google calendar) display was changed to be more modern. As well as being on its own page, upcoming events from it now appear in the right hand sidebar of each page. The main photo that appears across the top of the web pages now shows three different aspects of club radio activities.

The club's buying power was used to obtain members discounted prices on BHI noise cancellation speakers and Icom ID-31A D-STAR handhelds.

In the latter half of the year, the club's Projects and Development group weekly meetings had a resurgence with several projects being started, completed and demonstrated; this included QRP transceivers for 80, 40 and 20 metres from kits, a HF valve linear amplifier and power supply and several antennas and accessories.

We expect this trend to continue with some very active members providing new ideas for what can be constructed - our own little 'makers group' within the club.

The club's monthly lecture program kept us all educated and entertained with a constantly changing variety of subjects being covered by club members and guest speakers. The multimedia facilities in the lecture room have started an upgrade and improvement program of which we will see more of in 2013.

The club's repeaters all worked flawlessly serving not only CCARC members but all amateurs on the Central Coast and beyond, including those passing through the area. The linking of several east coast repeaters is again being considered for 2013 and the hardware to make this possible being assembled.

The amateur TV repeater got a constant work-out on Monday and Tuesday nights with Victor VK2BTV running regular technical, educational and amateur radio related news programs as well as recordings of previous lecture night presentations. Thanks to Hamnation, ARVideoNews and HQARadio for permission to retransmit their material. Linked with this Victor and George executed a major coverage area survey to see what the coverage will be like when the repeater switches from analogue to digital TV, the equipment for which was assembled and tested during the year and is ready to be installed. Some action to improve coverage in certain areas is planned.

To keep the club informed about projects and generally what is going on in the club and in amateur radio in general, the club's quarterly magazine 'Smoke Signals' has been growing in content over the year. This continues to provide some very interesting reading for the club members and each new edition is eagerly awaited. For more immediate information of what is happening at the club, the periodic (usually weekly) web based newsletter 'CCARC NEWS' has kept members informed through the year as has the club's online calendar.

So you can see, for a 55 year old radio club, the CCARC still has a lot of activities and even more plans for the future!

See you at Wyong in February!

Club Grants for 2012 Announced

Phil Wait VK2ASD

The Board of the WIA has accepted the recommendations of the 2012 Club Grant Committee and announced the successful applications.

- The Blue Mountains Amateur Radio Club will receive a grant of $600 to make improvements to their Club Station and hall to enable them to conduct training and education courses.
- The Brisbane Amateur Radio Club will be supported by a grant of $600 to provide a laptop computer to run AOCP classes.
- The Central Goldfields ARC Maryborough will receive a grant of $500 for a data projector for a new meeting room.
- The Eastern and Mountain Districts Radio Club will be supported by a grant of $1,000 to support their work promoting amateur radio by the installation of a Digital TV system for both fixed and portable use in classrooms and public display.
- The Fishers Ghost Amateur Radio Club will receive a grant of $573 to help them to improve their building shared with a Scout group by the provision of screen doors.
- The Scout Members Amateur Radio Team WA will receive a grant of $600 to purchase publicity materials such as posters, website and exhibition pull up banners to be used to promote amateur radio training and assessment.
- The Sherbrooke Community Radio Club will be supported by a grant of $800 to purchase a 4 kW generator and marquee to better participate in public events, radio contests and JOTA.
- The Tamworth Radio Club will be supported by a grant of $520 to support their on-going project installing digipeaters in NW NSW in support of Scout training and amateur radio generally.

The Board thanked the Club Grant Committee for their work.

VHF/UHF - An Expanding World

David Smith VK3HZ
e *vk3hz@wia.org.au*

Weak Signal

Welcome back after two months away. As I write this, the bands are jumping with contacts, literally, to the left and right (VK6 and ZL). However, that's for next month.

Back to November, which was fairly quiet. On the morning of the 17th, the Leonids meteor shower produced some good burns. Rod VK4ARN managed to make SSB contacts with Rob VK1KW, Brian VK3BBB and David VK3AUU among others.

On November 25th, a high-pressure cell produced good tropo conditions. Phil VK5AKK in the Adelaide Hills worked across to John VK7XX near Launceston on 2 m. On 70 cm, Colin VK5DK in Mt Gambier worked Joe VK7JG near Launceston. Andy VK3ES, portable near Mt Macedon, worked across to Brian VK5BC and Phil VK5AKK on 23 cm.

On to December, which started promisingly, fell into a hole, but ended with a bang. On the 1st, the bands opened from the east coast across to northern ZL. Many contacts were had between VK2 and VK4 to ZL1 and ZL2. Of note, Ross VK2DVZ worked Steve ZL2AVS – 2087 km – on 23 cm peaking to 5x7. Adrian VK4OX worked Brian ZL2AVZ – 2318 km - on 70 cm with 5x2 reports.

On December 29th, a giant Es opening occurred across the Tasman from ZL into VK2, VK3 and VK4. Between 0600Z and 0900Z, many contacts were had. The map below - courtesy of the VK Logger - best shows this, and also gives a good indication of the Es cloud location over the central Tasman Sea.

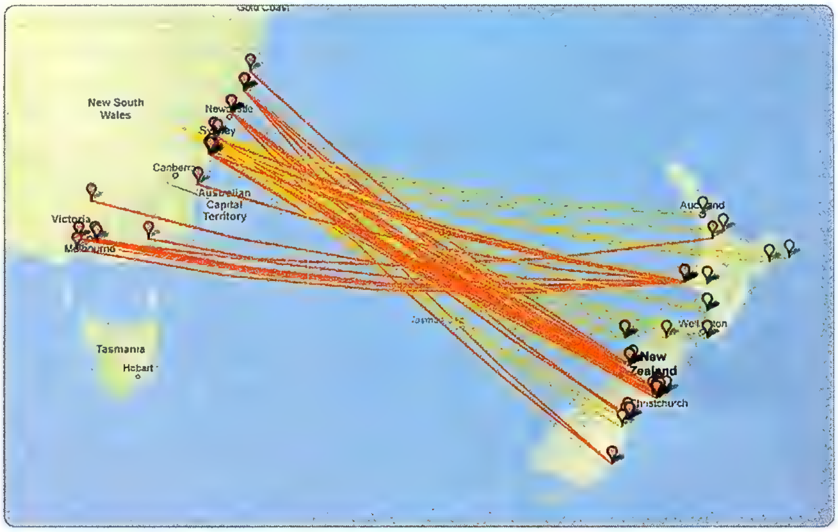


Photo 1: VK-ZL Es opening – 29 December 2012.

ZL2ADU had a beeline into VK3 working VK3s DUT, VG, AMZ, OE, YFL and AKK.

Interestingly, Bob ZL3TY had his AIS ship receiver running and logged ships along the NSW coast as shown below.

This is a good demonstration that AIS is proving a worthwhile substitute for the TV stations as a beacon, at least where the endpoint of the path is near busy shipping routes.

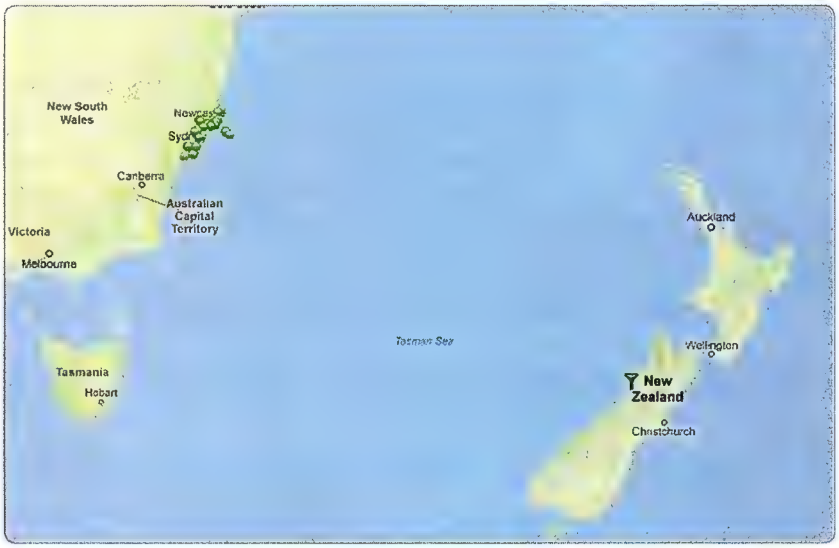


Photo 2: ZL3TY AIS reception – 29 December 2012.

To finish up 2012, December 31st/January 1st saw the bands opening east and west across the south of the country. At 20 minutes to midnight, Mike VK3KH worked Ron VK6VOX on 2 m at 5x5. Two hours later, Ian VK3AXH worked Bob VK6BE in Albany with a 5x9+30 report on 2 m and 5x5 on 70 cm. The following morning was to prove very busy for 90-year-young Bob. The band opening spread from VK6 across to east Gippsland producing a dogpile of stations on 144.1 trying to work him. In total, he had more than 40 contacts. On 2 m, he worked as far as Norm VK3DUT (2692 km), Robbie VK3EK (2676 km), Rhett VK3GHZ (2668 km) and Leigh VK2KRR (2650 km). On 70 cm, Ian VK3AXH was his furthest contact at 2334 km.

Meanwhile, in the other direction, things were very active between VK2/4 and ZL. Once again, a picture is worth a thousand (well, 100) contacts.

Contacts of note included VK2s ZT, AMS and DVZ working Steve ZL1TPH/P on 23 cm over a maximum distance of 1947 km. Ross VK2DVZ (and many others) also worked Dave ZL1AKW on 70 cm for a distance of 2253 km.

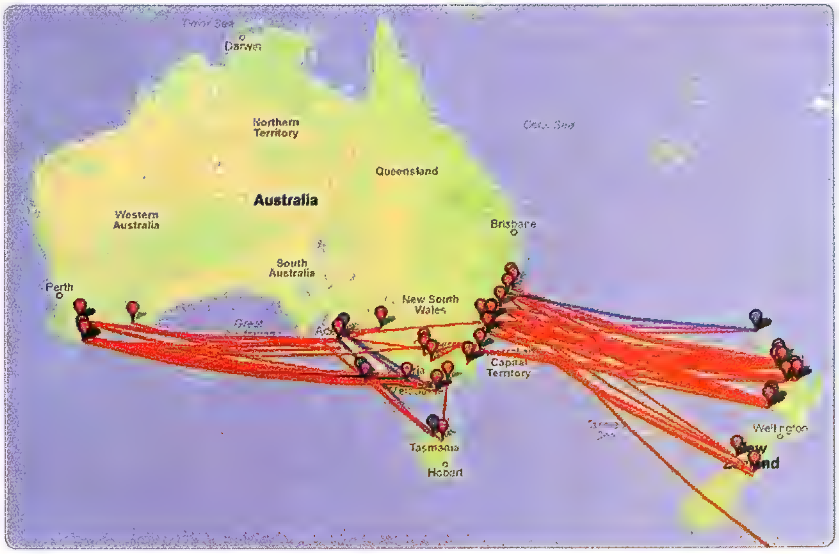


Photo 3: East-West opening - New Year's Day.

Photo 4: Optical DX - Peter VK2YGM (left) and Dan VK2GG.

10 GHz GPS-locked beacon

Alan VK3XPD is working on a 10 GHz GPS-locked beacon for the Melbourne region, which will be operational shortly. Alan writes: *This to advise there is a new 10 GHz beacon operational at my QTH in Camberwell. It is on 10368.530 MHz, GPS-locked with six watts into an Omni WR-90 slotted waveguide antenna. It identifies once per minute with 'DE VK3RXX QF22'.*

It's still very breadboard at present while I see how the PA goes/survives our summer heat. The beacon exciter was built entirely from VK3XDK hardware. The PA is a high gain eight watt unit that I found on 'ePray' several years ago. It's not the most efficient PA with a power consumption of some 45 watts.

My thanks to Graham VK3XDK for his hardware/modules and to David VK3HZ for developing the software to perform the Ident functions.

Don't forget... since it is GPS locked, even if you are a long way away, you can look for its weak trace, direct or via aircraft, in WJST knowing it will be on frequency.

After the test period, if it survives OK I will complete the build and relocate it up a tower at about six metres.

Spring FD – Optical

During the Spring VHF/UHF Field Day, Dan VK2GG and Steve VK2XDE decided to extend the boundaries somewhat. Dan writes: *We were at Gloucester NSW on that hot Saturday morning for the Spring F/D.*

We were very surprised to find out that optical comms worked during a hot, bright day! Our maximum distance was 1.1 km, not too bad, considering my gear had been tested briefly over a six km night-time path, and Steve VK2XDE's gear had only been *completed a week prior to the contest. As far as using 474 THz for field days goes, it was very difficult, slow and painful to align the lenses, but worth it in the end.*

Initially, the optical contacts were included in Dan and Steve's Field Day results. However, when the results were published, a number of objections were raised on the grounds that optical frequencies are not within the definition of radio, and our licence conditions do not mention an optical band.

From the WIA:

This matter has been considered by the WIA contest director Trent Sampson VK4TS and the contest committee. They have decided that while the WIA does not want to discourage experimentation, optical contacts should not be counted towards the final score of any station.

This does not prevent anyone from making optical contacts. They will still be accepted in future Field Day logs. But they will go into a separate results table and their scores will not contribute to the final all-band score.

So much for innovation and experimentation!

Please send any Weak Signal reports to David VK3HZ at *vk3hz@wia.org.au*

Digital DX Modes

Rex Moncur VK7MO

10 GHz aircraft scatter with JT65c

On 6 November Rex VK7MO operated from Boat Harbour north of Newcastle and worked Dave VK3HZ at Mt Macedon to extend the National 10 GHz digital record to 850.7 km. While this path is close to the Melbourne-Sydney flight path it does not cross it when the aircraft are visible at both ends and thus the QSO had to be done on side scatter of around three degrees which does significantly reduce signal levels.

10 GHz EME Grid Square tour with JT65c

From mid-November to mid-December Rex VK7MO undertook a grid square tour across the mainland from Brisbane to Carnamah in WA, activating some 25 grid squares with his 77 cm dish and 45 watt portable station. OK1KIR, W5LUA, VK3XPD and VK3NX participated with OK1KIR working 22 grid squares. At three grid squares operations were conducted from the home QTH's of Kevin VK4UH, Neil VK2EI, and Matt VK2DAG, who all made 10 GHz EME contacts. The 10 GHz JT65c EME contacts were only possible by using Glen VK1XX's automatic Doppler correct program. Surprisingly, even though JT65c works with 10.8 Hz tone spacing, it was possible to get reliable decoding with up to 170 Hz of spreading. The prime reason for the visit to WA was to try tropo across the Great Australian Bight, but while waiting for tropo that did not eventuate the time was taken up working 10 GHz EME. The 10 GHz EME digital record was extended five times with W5LUA, to 17,100.7 km at Prevelly WA which is as far as one can go before the Indian Ocean. More details are at: *http://www.vk3hz.net/microwave/10GHz-EME-Grid-Square-Tour.pdf*

At Albany Rex contacted Derek VK6DZ, who took part in one 10 GHz EME contact and provided his workshop for running repairs. While Derek's home location has a relatively poor take-off, he is setting up to go portable at Torbay Hill where Wally VK6KZ operated for his world record 10 GHz QSO. At this stage his portable operations will be limited to 432 MHz digital but we are looking at setting him up for 10 GHz digital in the future.

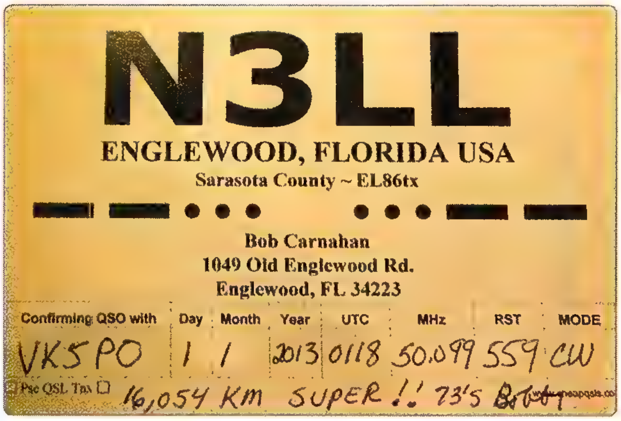
Please send any Digital DX Modes reports to Rex VK7MO at *rmoncur@bigpond.net.au*

The Magic Band – 6 m DX

Brian Cleland VK5BC

The summer Es season has been disappointing with many days with no or little propagation. Some of the highlights are as follows.

Although Bob ZL1RS worked into the Pacific and USA several times during December the first action from VK was on the 31st December when John VK5PO started to hear Ws working Bob and eventually working Larry K5RK in CW at 559 over a distance of 14,989 km. More followed next day with New Year's Day producing the first opening into E51 for the season. Norman E51E who was holidaying on Aitutaki Island in the South Cook Islands was worked by about 20 VKs from VK2, 3, 5 and 7. A little later Victor E51CG made his first appearance for the season working many VKs with signals averaging around 5/7 SSB.



N3LL

ENGLEWOOD, FLORIDA USA

Sarasota County ~ EL86tx

Bob Carnahan
1049 Old Englewood Rd.
Englewood, FL 34223

Confirming QSO with	Day	Month	Year	UTC	MHz	RST	MODE
VK5PO	1	1	2013	0118	50.099	559	CW

☐ Psc QSL Tnx ☐ 16,054 Km SUPER !! 73's

Photo 5: The N3LL QSL card for the 16,054 km six metre QSO with VK5PO.

The big highlight also happened on the morning of New Year's Day with John VK5PO this time working Bob N3LL in Englewood Florida with 559 CW both ways over a distance of 16,054 km. This was the longest contact completed from VK this sunspot cycle. Well done John. Below is a copy of the QSL card from Bob. After a very quiet morning on 21st December, the band opened to Japan mid-afternoon with Hiyo JR2HCB being worked by several VK2, 3 5, and 7s. Then at around 0530 UTC Willem DU7/PA0HIP was making the trip to southern VK in CW and a little later Willem worked many VKs on SSB finishing at 0730 UTC with a bag of 4 x VK2, 13 x VK3, 1 x VK4, 5 x VK5 and 2 x VK7.

On 22nd December the E51WL beacon from North Cook Is was heard for the first time this season in VK. Garry VK5ZK reported that it was easily decoded with CWSkimmer. It was also reported by VK3OER and Frank VK7DX. Later in the day Bob ZL1RS worked Norman E51E on Aitutaki Island on SSB.

From VK6 the highlight was working V84SMD, the DXpedition to Brunei on 16th November by Andy VK6OX, Graham VK6RO and Peter VK6KXW. Andy VK6OX also reports a scratchy CW contact with Warwick E51WL on 13th November. In December regular openings to the eastern states occurred with multi hop contacts to Bob ZL1RS being completed on several occasions.

On 26th November Scott VK4CZ worked Andy YS1AG in El Salvador on 50.1000 CW 519, a distance of 13440.6 km.

A note from Greg VK8GM who reports:

Sorry we haven't been active on six metres for the last copy of months (something about the sun) but today (09/12/12) 10 m opening up strongly and I went up to try six metres at 0415. After a few calls on 50,110 George VK4AMG answered at 0420 with a 59 contact into S/E Queensland. He informed Dennis VK4ACE the band was open and we made contact at 0423. These calls where then followed by 10 more good contacts to VK4HU, VK4BL, VK2FAD, VK2NL, VK2ZT, VK4TJ, VK7RR/4, VK4XE, VK2MA and the final contact with Trevor VK4YH at 0558 with a solid 58. All in all I tried to answer all I could hear with 100 watts on my six element Yagi at 17 metres but I'm sure there where a few I couldn't dig out of the mud.

Hope this is a sign of things to come and if needed anyone could call me on my mobile 0458814109 if they think the band is open to Alice Springs and I may try to race home for a quick contact.

Good to hear Brad VK2QO operating from his new QTH of Toronto near Newcastle. At present Brad is mainly operating from his car and reports;

On the 14/12/12 at 0450Z I heard JA CW on 110 on the way home from work (in Newcastle). I then looked up and down the band hearing many JAs from S5 to S9 but after putting calls on 110... nothing. I had a listen up a bit and heard JA1OJJ Yoshi talking, he was S9. So with nothing to lose I gave him a call and to my surprise he answered me with a 5/5 report, and I gave him a 5/9 on 50.139 at 0452Z. My first JA on six metres from the car. Next was the contact with Remi FK8CP in CW from the 67 foot end fed wire antenna that is up through the palm trees here, he was 579 but gave me the usual '73' in reply. Have had four more contacts from the car since then, to VK5PO John 59, VK5ADO David 59, VK5BC Brian 59 and VK5RM Phil (ex 4FIL) 59. All these on the way home from work.

The Adelaide VK5VF beacon is back on air on the new frequency of 50.320 MHz. Received the following note from Mark VK5AVQ:

The Adelaide six metre beacon is again operating. The beacon has been off air for a while (it died). A decision was then made to build a new beacon, which Col VK5ACE kindly undertook.

At the same time we succumbed to pressure to shift the frequency from 52.450 MHz to 50.320 MHz to align with the WIA band plan. A new feature is that the unit is now frequency locked to the GPS site standard, also a recent addition. Other details remain unchanged such as power, location and antenna.

Please send any six metre information to Brian VK5BC at *briancleland@bigpond.com*

Over to you

What is the point of being an amateur radio operator if no one will talk to you?

This is something that has concerned and annoyed me for some time. I have a unique, if 'quirky' personality which is caused in large part by Asperger's Syndrome, realised and diagnosed very late (at age 47) in 2009.

My 'way' is to be direct, honest and often opinionated and these things are apparent in my 'on air' manner. The trouble is that because of my Asperger's induced personality, my general CQ calls mostly go unanswered and I am aware of very blatant Asperger's Syndrome discrimination towards me from various Australian amateur radio operators over the years.

It is all a bit sad and it does not reflect well on many Australian amateur radio operators and their 'attitudes' to someone who may be a little 'different' to the 'neurotypical' population.

Regards, Felix VK4FUQ in Ingham, Queensland.

VK3 news Amateur Radio Victoria

Jim Linton VK3PC
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w *www.amateurradio.com.au*

Centre Victoria RadioFest

This major event will be at the Kyneton Racecourse on Sunday February 10, with the doors opening at 10 am. A feature will be a Homebrew Competition with the primary judge being Drew Diamond VK3XU.

There will be a bustling Traders Hall with the latest commercial offerings, a second-hand seller market, club displays and the ever popular mini-lecture program in the function room of the grandstand.

The speakers there are:

- Alan Devin VK3XPD and Michael Coleman VK3XH on *'78 GHz and above - An alternative approach to millimetre wave homebrew'* illustrated with a transceiver, dish antenna, mixers and filters.
- Wayne Merry VK3WAM, the VK3 leader of 'Summits on the Air' (SOTA): a new activity for portable and home stations.
- Drew Diamond VK3XU will talk about homebrewing.
- Kevin Forbes VK3UKF has an interesting presentation on LEO packet digital radio, NOAA WX satellites, ISS websites, satellite tracking and the required knowledge.

A full live display of the Elecraft K-line will be on show thanks to Gary Gregory VK4FD, an enthusiast of the brand in a motorhome. There you will see a K3 transceiver, KX3 transceiver, KPA500 amplifier, KAT500 auto-tuner, P3 Panadapter and a portable full size tri-band Yagi antenna and trailer. It will be an informal gathering to try out the Morse code paddle, talk on SSB, or catch-up with Elecraft devotees and would-be operators.

Want to secure a trading spot? Table bookings can be made conveniently and easily at our online shop via the main website. For general inquiries contact Ross Pittard VK3CE on 0408 533 107, and Club Corner displays without trading including one free trestle table, contact Tony Hambling VK3VTH on 0423 635 152 or *vk3vth@amateurradio.com.au*

Free tea and coffee will be available from 8 am, with the toilets open at 7 am. Check out the full and latest details on the website *radiofest.amateurradio.com.au*

Homebrew meetings welcome all

The Homebrew and Constructors Group regularly meets and is taking shape with more new members attending to show what they do and learn about the activity of building. A feature of each meeting is a 'Show and Tell' where anyone can bring along their latest efforts to share with the group. Already on show are examples of test equipment, QRP QRSS very slow Morse code beacons and two variants of the VK3XU TCF (twin crystal filter) SSB transceiver.

At the December meeting the general discussion covered many topics, but of special interest was printed circuit board (PCB) design using computer aided design (CAD) software. Both are now likely to be explored in more detail in the future.

The meetings will include a series of guest speakers. Peter Cossins VK3BFG has offered to present a talk on slow scan television (SSTV) from a time before it became just another software package. In the 1970s and 80s a small but active group, located largely in greater Melbourne, were sending SSTV pictures around the world using dedicated home-brewed electronic equipment.

The next meeting will be held on Saturday February 2, at 2 pm. The venue is the Amateur Radio Victoria rooms at 40g Victory Boulevard, Ashburton.

The interactive VK3RCW

Users of the new Morse code beacon VK3RCW at Waverley are finding it very useful in learning or brushing up their code skills. For many years Amateur Radio Victoria ran a beacon that randomly sent code groups at 5 wpm and 10 wpm. An ageing tower meant it had to go off air, with fears expressed by some that would be the end of the facility.

A volunteer, David Byrne VK3DRB, initiated the idea of a modern interactive beacon. He built it complete with the voice of Jane Holmes, a friend of his and well known radio presenter. It now generates Morse code on 145.650 MHz and periodically invites, by voice, access to its menu via DTMF codes on 433.050 MHz.

Classes begin for 2013

The next class and assessment weekend for the Foundation licence will be on February 23 and 24, with enrolments now open.

These popular quality courses are held at the conveniently located and equipped ARV office at 40G Victory Boulevard, Ashburton. To enrol or obtain the Foundation Licence manual study and operational practice guide book, contact Barry Robinson VK3PV on 0428 516 001 or *foundation@amateurradio.com.au*

Spotlight on **SWLing**

Robin L Harwood VK7RH
e *vk7rh@wia.org.au*

2012 has finally been consigned to the history books and hopefully 2013 will be better. In the final days of last year, several shortwave broadcasters permanently closed their shortwave senders, including the Voice of Croatia in Zagreb, Christian Voice from Lusaka, Zambia as well as a swathe of shortwave senders operated by Russia. As I have previously mentioned, the BBC World Service is definitely closing their Cyprus medium and shortwave facilities at the end of March, following the reduction in programming output at the same time. One can only speculate what further reductions are in the offing.

CVC seems to also have abandoned shortwave altogether. You may recall they took over the former Radio Australia site near Darwin before that was abandoned a few years ago. The senders were either dismantled to Shepparton or Kununurra or broken up for scrap. They continued leasing senders in the former CIS for programming in Hindi and Urdu yet it is unclear whether they too have been axed. However HCJB Australia has been putting excellent signals into the region from new and improved antennas and senders from a new site in Kununurra, WA.

I have been reading on the newsgroups of a Dutch shortwave station, known as the Mighty KBC, successfully transmitting text at the conclusion of their audio programming. Several formats have been tried and even decoded from a YouTube video. I believe that Kim Elliot, formerly of the VOA has been involved in these experiments. The Mighty KBC is using senders either in Bulgaria or Rumania. Incidentally the latter is continuing to provide strong signals into this region. The only remaining European shortwave senders active seem to be Spain, Greece, Austria, Rumania and Germany. The Spanish did have a temporary setback with a sudden funding cutback, which led to senders going black for a while. Some target areas have been eliminated including Oceania and North America. Whether this reprieve will last is yet to be determined.

Radio St. Helena operated on 1548 kHz for many decades and was occasionally relayed on shortwave using a disused PTP transmitter. Sadly this station closed permanently on Christmas Eve 2012 to be replaced by new FM outlets with syndicated programming off satellite. There goes my chance to hear this remote South Atlantic island on shortwave!

I did hear the Grimeton alternator SAQ on 17.2 kHz. The transmission was on Christmas Eve at 0800 UTC. However by 0803 it was finished. Over 180 people like me heard it via the University of Twente WebSDR and there were plenty of others who missed out by just a few seconds. Incidentally this webSDR has become extremely popular with a range from 5 kHz to 26 MHz. Yes, there are plenty of other webSDR sites available but primarily on amateur frequencies. Many are constructing their own software-defined radios without linking them to the WWW. Incidentally the link is *http://websdr.ewi.utwente.nl:8901/*

Just before Christmas 2012, it looked as if the Burmese intruder on 7110 had finally gone but it has since been heard in Sri Lanka back on the same channel. There are plenty of vacant channels outside of the amateur allocation. However it turns out that Burma does not permit ham operations.

73 until next month.

Erratum: The ‘Old Timers’ luncheon, Adelaide, 2012

In the article on the Old Timer’s luncheon (p. 28 December 2012 issue of Amateur Radio), the name of one of the participants was spelt incorrectly and his callsign omitted. Darcy Hancock is VK5RJ.

We apologise for the errors.

Editor.

Contests

James Fleming VK4TJF
e leartez@bigpond.com

Hello all and welcome to a new year and hopefully a new year of contesting. My name is James Fleming VK4TJF and here is my contest column.

There will be some who would have been very successful last year entering many contests and placing on many of them. However most, like me, only contest part time with a few here and there, so perhaps your new year's resolution could be to become more active in contesting. Contesting is a great way to increase your DXCC count and to collect some of those far flung interesting QSL cards. Even if you don't participate in the contest, or the whole contest period or don't put in a log sometimes it is fun just to give out a few numbers. Myself, I try to operate a few contests during the year including the ARRL DX contest in February, the John Moyle in March, the Oceania DX contest in October and also to 10 metre contest in December.

A great resource is the WA7BNM contest calendar, and listed below are some of the more widely known and popular contests for the month of January, 2013, taken from Bruce Horn's real nice website. Google 'WA7BNM' for a look at what is on in February.

So there is not a bunch of well known, big contests happening in January. However I notice that there is a couple on the 26th January right around the time of Australia Day and it might be rather cool to use the AX prefix during one of the contests. And I also notice for those 10 metre aficionados that the DARC puts on a 10 metre contest. I know one thing that I did on New Year's was straight key night. So perhaps a reasonable goal for you this year is to learn CW and do a CW contest.

SARTG New Year RTTY Contest	0800Z-1100Z, Jan 1
ARRL RTTY Roundup	1800Z, Jan 5 to 2400Z, Jan 6
EUCW 160m Contest	2000Z, Jan 5 to 0700Z, Jan 6
Hunting Lions in the Air Contest	0000Z, Jan 12 to 2400Z, Jan 13
North American QSO Party, CW	1800Z, Jan 12 to 0600Z, Jan 13
DARC 10-Meter Contest	0900Z-1059Z, Jan 13
ARRL January VHF Sweepstakes	1900Z, Jan 18 to 0359Z, Jan 20
LZ Open Contest	0000Z-0400Z, Jan 19
Hungarian DX Contest	1200Z, Jan 19 to 1200Z, Jan 20
North American QSO Party, SSB	1800Z, Jan 19 to 0600Z, Jan 20
CQ 160-Meter Contest, CW	2200Z, Jan 25 to 2159Z, Jan 27
REF Contest, CW	0600Z, Jan 26 to 1800Z, Jan 27
BARTG RTTY Sprint	1200Z, Jan 26 to 1200Z, Jan 27
UBA DX Contest, SSB	1300Z, Jan 26 to 1300Z, Jan 27

A good contest prep trainer for CW is called Morse Runner, and it is free on the internet.

I know that the 10 metre contest last year was real fun and the VKCC did multi-operator single transmitter low power really well. I went to Toogoolawah again, to Watts Bridge and did single transmitter multi-operator low power with David VK4PDR. Scott VK4NUT helped set up the tower provided by Kevin VK4UH for the four element monoband Yagi antenna that was built and modelled by John VK4YJV. We packed it in on the Sunday about lunch time so that we could get home at a reasonable hour, as the site is a two hour drive from home. However the drive up to Watts Bridge is real nice, going over Mount Glorious and all. And we had a lot of fun eating the roast that Scott put on, especially nice. So we had a real nice weekend in the bush out in the open fresh air. We may not have made a heap of contacts however we had fun and we got to get the Redcliffe and Districts call VK4IZ out there on the bands.

Here is what VK4WIL had to say about the 10 metre contest:

Well it seems that a lot of operators didn't join in the fun over the weekend due to poor propagation forecasts. Besides that the band was very poor indeed and the lack of operators on air was noticeable. SSB was very poor, but good 5 and 9 signals from most CW stations made CW easy for most of the weekend, although being affected by QSB at times. Sunday was worse than Saturday's performance and VK4WIL's target was falling way below last year's effort. Sunday night saw 20+ signals from Europe long path and still 5/7 short path. We had beams pointing both directions. South America was worked LP till about 9 pm local. Due to poor SSB, we ended up sitting on CW most of the weekend, and this morning (Monday) was so bad for DX contacts into the States we finished the last three hours with CW. We just scraped over 1000 QSO's. That's the whole weekend, not this morning. Hi. I wish!

Good to hear VK2GGC, 7GN, 4IZ, 4LAT, 4NM, 4BAA, 7CW, 7XX and many other VKs on. Thanks for the contacts. Alan VK4SN, Lockyer Valley Amateur Radio Club VK4WIL.

Now I say that 1000 QSOs certainly is not bad and sounds like a real good time to me. Just goes to show that even when the propagation is poor when people get on the band it makes for a good time and QSOs are there to be made.

Well this closes out another contest column of *AR* magazine. And remember that February is right around the corner with some more contests. So use the month of January to practice and brush up on your CW skills. The more contesters we have the more fun it is. It is always good to hear the bands come alive during a contest. Even if you are not a diehard contester please give out a few numbers when you hear us on and before you know it you may be a casual contester yourself.

Editor's Note: Welcome aboard James. Readers will note the focus has been on January, but as this is his first attempt at a column, I have largely left the column as submitted. I will advise James of the need to think a little further ahead for future contributions. Peter VK3PF.

John Moyle Field Day Contest 2013

Presented by Denis Johnstone VK4AE/VK3ZUX

16 - 17 March, 2013

0100 UTC Saturday - 0059 Sunday

I wish all entrants good luck, and look forward to hearing you on air during the contest!

N.B. new email address: *jmfd2013@wia.org.au* will be set up close to the event for entries and you can check out latest info at *http://www.wia.org.au/contests/*

Overview

1. The aim is to encourage and provide familiarisation with portable operation, and provide training for emergency situations. The rules are therefore designed to encourage field operation.
2. The contest takes place on the 3rd full weekend in March each year, and runs from 0100 UTC Saturday to 0059 UTC Sunday, 16 - 17 March 2013.
3. The contest is open to all VK, ZL and P2 stations. Other stations are welcome to participate, but can only claim points for contacts with VK, ZL and P2 stations.
4. Single operator portable entries shall consist of ONE choice from each of the following (e.g. 6 hour, portable, phone, VHF/UHF):
   a. 24 or 6 hour;
   b. Phone, CW, Digital or All modes;
   c. HF, VHF/UHF or All Bands.
5. Multi-operator portable entries shall consist of ONE choice from each of the following (e.g. 24 hour, portable, phone, VHF/UHF):
   a. 24 or 6 hour;
   b. Phone, CW, Digital or All modes;
   c. HF, VHF/UHF or All Bands.
6. Home and SWL entries shall consist of ONE choice from each of the following (e.g. 24 hour, portable, phone, VHF/UHF):
   a. 24 or 6 hour;
   b. Phone, CW, Digital or All modes;
   c. HF, VHF/UHF or All Bands.

Scoring

7. Portable HF stations shall score 2 points per QSO. CW only contacts to score 4 points per QSO for contacts with either home or portable stations.
8. On VHF/UHF portable stations for Phone and Digital each contact scores 2 points per contact, and CW contacts score 4 points. In addition the VHF/UHF Portable stations shall add a distance score of the following on 6 m:
   a. 0-49 km, 2 points per QSO;
   b. 50-99 km, 5 points per QSO;
   c. 100-149 km 10 points per QSO;
   d. 150-299 km 20 points per QSO;
   e. 300-499 km 30 points per QSO;
   f. 500 km and greater, 2 points per QSO.
9. Portable stations shall add an additional distance score on 144 MHz and higher:
   a. 0 to 49 km, 2 points per QSO;
   b. 50 to 99 km, 5 points per QSO;
   c. 100 to 149 km, 10 points per QSO;
   d. 150 to 299 km, 20 points per QSO.
   e. 300 km and greater, 30 points per QSO.
10. For each VHF/UHF QSO where more than 2 points are claimed, both the latitude and longitude of the station contacted or other satisfactory proof of distance such as the 6-figure Maidenhead Locator must be supplied.
11. Home stations shall score:
    a. Two points per QSO with each portable station.
    b. One point per QSO with other home stations.
    c. For VHF/UHF QSO Home stations shall add as a distance score on 6 m:
       i. 0-49 km, 1 points per QSO;
       ii. 50-99 km, 2 points per QSO;

    - iii. 100-149 km 5 points per QSO;
    - iv. 150-299 km 10 points per QSO;
    - v. 300-499 km 15 points per QSO;
    - vi. 500 km and greater, 2 points per QSO.
  - d. Home stations shall add as a distance score on 144 MHz and higher:
    - i. 0 to 49 km, 1 points per QSO;
    - ii. 50 to 99 km, 2 points per QSO;
    - iii. 100 to 149 km, 5 points per QSO;
    - iv. 150 to 299 km, 10 points per QSO.
    - v. 300 km and greater, 15 points per QSO.

Log Submission

12. For each contact: UTC time, frequency, station worked, RST/serial numbers sent/received and claimed score. (VHF and above location of other station and distance showing the Lat/Long or Maidenhead Locator to 6 figures for the station worked.)
13. Logs must be accompanied by a summary sheet showing: call sign, name, mailing address, section entered, number of contacts, claimed score, location of the station during the contest, and equipment used, and a signed declaration stating *"I hereby declare that this station was operated in accordance with the rules and spirit of the contest and that the contest manager's decision will be accepted as final"*. For multi-operator stations, the names and call signs (legible) of all operators must be listed.
14. The email address for this year's JMMFD contest should be setup a few days before the contest, and I would suggest to those who will be sending in your Logs electronically, to send in a test email with the words "TEST JMMFD 2013", in subject the line and also set the "READ REQUEST RECEIPT flag. Your call sign can then be added into the database for this year's contest. When actually submitting your log, if you do not receive an e-mail acknowledging receipt, then the log has not been received.
15. Paper logs may be posted to "John Moyle Contest Manager, 27 Laguna Ave, Kirwan 4817 QLD". Alternatively, logs may be e-mailed to jmfd2013@wia.org.au, vk4ae@wia.org.au, or snail mailed via the WIA Contest Manager, JMMFD, P.O. Box 2042 Bayswater, VIC 3153. Club stations must forward in the first instance an electronic version of their log. Club Stations who submit only a paper log will have that log returned as unreadable, due to the very large amount of work involved in entering and checking large paper logs.
16. The following formats are acceptable: Microsoft Excel or Word, ASCII text or the print log output from electronic log programs such as VK Contest Log (VKCL). Logs sent by disc or e-mail must include a summary sheet and declaration, but the operator's name (legible) is acceptable in lieu of a signature. Logs must be postmarked no later than 19 April 2013.

Certificates and Trophy

17. At the discretion of the Contest Manager, certificates will be awarded to the winners of each portable section. Additional certificates may be awarded where operation merits it. Note that entrants in a 24 hour section are ineligible for awards in a 6 hour section.
18. The Australian portable station, with the highest overall score will be awarded the President's Cup, a perpetual trophy held at the Executive Office, and will receive an individually inscribed wall plaque as permanent recognition.

Disqualification

19. General WIA contest disqualification criteria, as published in Amateur Radio from time to time, applies to entries in this contest. Logs which are illegible or excessively untidy are also liable to be disqualified.

Definitions

20. A portable station comprises field equipment operating from a power source, e.g. batteries, portable generator, solar power, wind power, independent of any permanent facilities, which is not the normal location of any amateur station.
21. All equipment comprising the portable station must be located within an 800m diameter circle.
22. A single operator station is where one person performs all operating, logging, and spotting functions.
23. A single operator may only use a call-sign of which he/she is the official holder. A single operator may not use a call-sign belonging to any group, club or organisation for which he/she is a sponsor except as part of a multi-operator entry.
24. A multi-operator station is where more than one person operates, checks for duplicates, keeps the log, performs spotting, etc.
25. A multi-operator station may use only one call sign during the contest.
26. Multi-operator stations may only use one transmitter on each band at any one time, regardless of the mode in use.
27. Multi-operator stations must submit a separate log for each band.
28. Logs submitted electronically can use a separate Excel worksheet for each band linked to a summary sheet. A typical example is shown at http://www.wia.org.au/contests/ which can be copied and adapted for the individual use of either a single or multi operator station.

29. A station operated by a club, group, or organisation will be considered to be multi-operator by default.
30. None of the portable field equipment may be erected on the site earlier than 28 hours before the beginning of the contest.
31. Single operator stations may receive moderate assistance prior to and during the contest, except for operating, logging and spotting. The practice of clubs or groups providing massive logistic support to a single operator is, however, totally against the spirit of the contest. Offenders will be disqualified, and at the discretion of the Contest Director, may be banned from further participation in the contest for a period of up to three years.
32. Phone includes SSB, AM, Simplex FM and Simplex D-Star.
33. CW includes CW hand or computer generated. Fully automatic operation is not permitted. CW contacts will score 4 points for HF and 4 points for VHF & UHF contacts plus the distance points.
34. Digital modes such as PSK31, RTTY, and packet may be used in the contest, but if they are, they shall be classed as Digital. Other modes such as ATV may be used and will be classed as Digital for scoring. Digital contacts will score points at the same rate as Phone.
35. All amateur bands may be used except 10, 18 and 24 MHz. VHF/UHF means all amateur bands above 30 MHz. Note: On 50 MHz, the region below 50.150 has been declared a contest free zone, and contest CQs and exchanges may only take place above this frequency. Stations violating this rule will be disqualified.
36. Cross-band, cross-mode and contacts made via repeaters or satellites are not permitted for contest credit. However, repeaters may be used to arrange a contact on another frequency where a repeater is not used for the contact.
37. Stations may make repeat contacts and claim full points for each one. For this purpose, the contest is divided into eight consecutive three-hour blocks: 0100-0359, 0400-0659, 0700-0959, 1000-1259, 1300-1559, 1600-1859, 1900-2159, 2200-0059 UTC. If you work a station at 0359 UTC a repeat contact may be made after the start of a new block providing they are not consecutive, or are separated by at least five minutes, since the previous valid contact with that station on the same band and mode.
38. Stations operating on Phone must exchange ciphers comprising RS plus a 3 digit number commencing at 001 and incrementing by one for each contact.
39. Stations operating on CW must exchange ciphers comprising RST plus a 3 digit number commencing at 001 and incrementing by one for each contact. Where the CW contact is with an overseas station that is unable or unwilling to give a valid serial number, the serial number shall be assumed to be 001.
40. Portable stations shall add the letter "P" to their own cipher, e.g. 59001P.
41. Multi-operator stations are to commence numbering on each band with 001.
42. Receiving stations must record the ciphers sent by both stations being logged. QSO points will be on the same basis as for Home Stations, unless the receiving station is portable.
43. The practice of commencing operation and later selecting the most profitable operational period within the allocated contest times is not in the spirit of the contest, and shall result in disqualification. The period of operation commences with the first contact on any band or mode, and finishes either 6 or 24 hours later.

If anyone wishes to contact me privately to discuss rules etc, my home phone number is (07) 4723 4229, and my snail mail and e-mail address is as shown in the Log Submission section above.

Denis Johnstone
VK4AE/VK3ZUX

A 2013 Callbook makes a great present.

Visit our online bookshop for details.

www.wia.org.au/members/bookshop/about/

VK7news

Justin Giles-Clark VK7TW
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Miena Hamfest

In VK7 we look forward to our biennial hamfest in the Central Highlands of Tasmania at the township of Miena. It is a fantastic community facility and the day is very well organised by the Central Highlands AR Club. The interesting byline in 2012 was it nearly didn't happen due to a nearby fire Incident Management Team who were about to take over the Community Hall. After some swift negotiating the day went ahead. Mark Tell and Dave Long from the ACMA gave a great presentation on the work of the ACMA. The retail traders had a good day along with the pre-loved equipment sellers. Thanks especially to David and Claureen from TTS Systems and Ross at Strictly Ham for supporting us. One non-AR related stand that did good business was Geoff VK7GW and XYL who were selling their locally produced wine, preserves and condiments. A big thank you to all involved for another great Central Highlands hamfest.

Save the Date

The 2013 'Meet the Voice' barbecue will be held at Ross outside the caravan park on Sunday 24th March 2013. Presentations start around 11 am EDST and the barbecue around noon. There will be car boot sales and registration is $5 per amateur licence holder and family with all profits from the event going to repeater maintenance around VK7.

VK7 Regional News broadcast

There are almost 20 people involved in bringing the VK7 Regional News broadcast each week. This includes compilers, readers, writers, rebroadcasters and others who for 51 weeks of the year do something to get you the local VK7 amateur radio news. A big thank you to all involved in 2012. The VK7 Regional News website address is: *http://groups.yahoo.com/group/vk7regionalnews/.*

Photo 1: Some of the Hamfest attendees listening to the ACMA presentation. Photo courtesy of VK7TW.

Repeater News

Dion VK7DB let us know that there has been work undertaken on the APRS digipeater VK7RMM in north west Tasmania and it is back to its reliable digipeating self! Hayden VK7HA has disassembled the antenna array from the old Mt Nelson repeater VK7RTC and intends to re-install it on the Grey Mountain repeater VK7RCH. This should improve the coverage of VK7RCH (438.575 MHz). NTARC now hold the licence and have taken over maintenance for the 70 cm repeater VK7RBH on Ben Lomond in NE VK7. We express appreciation to Barry Hill VK7BE who established and maintained VK7RBH for so many years.

Cradle Coast Amateur Radio Club

We congratulate two new 'F' calls - Marlene VK7FEMA and Kevin VK7FKEV. The end of 2012 saw a great CCARC BBQ/Field day at Bannons Park on Gunns Plains with RF being generated and much socialising around the BBQ. CCARC also took a leading role in radio communications for the State Equine Endurance event over the same weekend as the Miena Hamfest. A big thank you to Rick VK7FRIK for his organising ability and donated mobile operating trailer complete with 12 volt PC, power supplies and 2.6 kW generator; these donations were put to good use.

Northern Tasmania Amateur Radio Club

The last two months of 2012 saw some great NTARC events with a dinner meeting and guest speaker, David Murray from Centrelink bringing attendees up to speed with benefit changes. The December meeting was the annual pilgrimage to Myrtle Park for a great social night, albeit a little wet later. We congratulate NTARC Vice-President Lewis VK3FLPL who married XYL Liz early in December. The other big news in NTARC is the negotiation that, at the time of writing, was going on with the Scout Association on the possible joint use of the Rocherlea Scout Hall as NTARC clubrooms and training facility. Watch this space.

A big congratulations to Bill VK7AK who on 8 December 2012 notched up the 67th anniversary of holding his amateur radio operator's ticket – WOW!

North West Tasmanian Amateur TV Group

We congratulate Michael VK7FJJA who gained his Foundation licence and Paul VK7CC who upgraded to the Advanced licence. There are nightly broadcasts of amateur radio related videos and podcasts transmitted on Mondays, Wednesdays and Fridays on the VK7RTV two and six metre repeaters and the video streaming facilities of batc.tv on member stream VK7AX from 8.00 pm (local). The VK7AX packet wormhole and BBS systems has been pressed back into service. Access is currently via telnet (203.24.120.5:6300) and a login request can be made via anonymous login.

Radio and Electronics Association of Southern Tasmania

The REAST Annual General Meeting has been set for Sunday, February 17th, 2013 from 11:00 am and it will be followed by a BYO BBQ. All this will take place at the REAST clubrooms on the Queen's Domain, Hobart. The BBQ, boot sale and APRS tracking afternoon was well attended with some very interested in APRS installation hints. The November Show and Tell night saw a fantastic night of varied and interesting items with the highlight for the author being the items brought along by Tony VK7TU, who showed his homebrewed calculator, audio spectrum analyser, computer trainer and lighting controllers.

The REAST end of year celebration saw a great casual BBQ and then some ARDF fun with perfect weather. Richard VK7RO brought along a homebrewed FM band broadcast crystal set which created much interest. After the BBQ the fox was set a number of times and many tried their hand at ARDF.

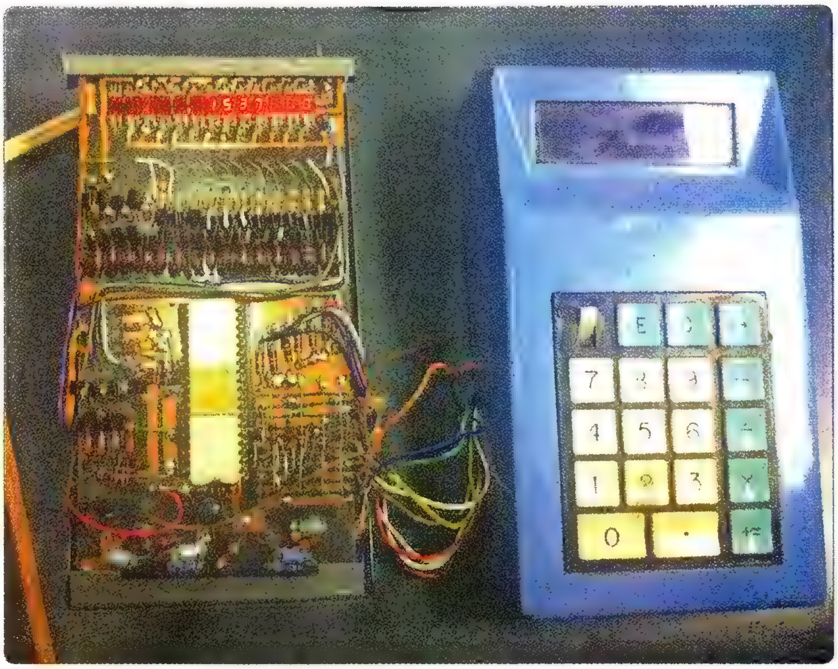


Photo 2: Homebrew calculator circa 1970s by Tony VK7TU. Photo courtesy of VK7TW.

Photo 3: Alan VK7KAJ fox hunting with tape Yagi, with Eric assisting. Photo courtesy of VK7FEET.

Centre Victoria RadioFest No. 6

The biggest radio event in Victoria

Sunday 10 February 2013 – Kyneton Racecourse

Visit the Traders Hall with all the major traders and their latest, or for pre-loved gear, bits and pieces go to the second-hand market place. This is a family friendly event. Catering is available, or have a picnic and relax. Free tea and coffee. Early hot breakfast at the gate from 8am.

Check out this great program

- ✓ Alan Devlin VK3XPD and Michael Coleman VK3XH on '78 GHz and above - An Alternative approach to Millimetre Wave Homebrew' - illustrated with a transceiver, dish antenna, mixers and filters
- ✓ Wayne Merry VK3WAM the leader of SOTA, 'Summits On The Air' - a new activity for portable stations
- ✓ Drew Diamond VK3XU will talk on homebrewing
- ✓ Kevin Forbes VK3UKF presents on LEOs, Packet Radio, NOAA Wx satellites, ISS, tracking and the required knowledge

Displays and activities include

- ✓ A Homebrew Competition judged by Drew Diamond VK3XU
- ✓ Elecraft K-line & portable yagi - Gary Gregory VK4FD
- ✓ Historical radios from Australian Vintage Radio Society
- ✓ Australian Ladies Amateur Radio Association ALARA
- ✓ Macedon Ranges Amateur Radio Club
- ✓ The Keith Roget Memorial National Parks Award
- ✓ Summits On The Air

Entry tickets $10: On sale from 9am and gate open at 10am. Children aged under 13 are free. Access to toilets from 7am.

Venue: Kyneton Racecourse, Campaspe Place (off Beauchamp St) Kyneton. Only an hour from Bendigo, Ballarat and Melbourne. Plenty of free parking.

Website: To learn more or to have a table booking see www.radiofest.amateurradio.com.au

Don't miss this major event and social occasion for everyone with an interest in radio communications. Ready to help you are volunteers from ***Amateur Radio Victoria*** and the ***Central Goldfields Amateur Radio Club***.

VK6news

Keith Bainbridge VK6RK
e vk6rk@wia.org.au

Another year is upon us, time to reflect on past activities and plan for new ones. I wish you all the very best for 2013 and may your amateur activities be interesting and productive!

Firstly this month we have the Hills Group news.

Our last two meetings for 2012 were a great success with a large number of members enjoying an extensive talk on the APRS system by Rob VK6UFO and a more select, wide-eyed group following Ray VK6ZRW around the TX Australia transmitter site at Bickley.

We closed the year with our Christmas barbecue on Saturday 8th December.

In January, HARG celebrated its 30 year anniversary. The club was formed on 28 January, 1983 when 30 amateurs met at the Kalamunda Hotel in the downstairs function room, at the invitation of John VK6HQ and Des VK6SU, and as a result of that meeting the Hills Amateur Radio Group was formed. To celebrate, we held a special luncheon at the Club Rooms at Lesmurdie on Saturday 12th January. Everyone was invited – not just club members but also past members and anyone who wanted to come and help us celebrate and renew old acquaintances.

Photo 1: The VI6AHR30 QSL card.

We were allocated the special event call sign VI6AHR30 for all of January and made a large number of contacts. Club member Miles VK6MAB designed a very attractive QSL card featuring our special call sign and these are being mailed out. 73 from Bill VK6WJ for the Hills Amateur Radio Group.

Thanks Bill and congratulations on 30 years of HARG!

Next up is the Bunbury Radio Club; I'm pleased to welcome their input to this column.

After a period of very little activity, the Bunbury Radio Club (BRC) is experiencing a resurgence in both membership and club activities. Centred on Bunbury in the south west of WA, our membership extends to Exmouth in the north, Kellerberrin in the east, and Nannup in the south. The number of financial members of the BRC has nearly doubled in the past 12 months. Regular club meetings are held on the 2nd Saturday of each month, at a member's QTH. Members also get together to participate in other club activities.

The BRC operates and maintains two repeaters, on 2 m and 70 cm, from a site near Harvey. In June, the club undertook a refurbishment of the VK6RBY repeater site. The refurbishment included the construction of a new brick shed (thanks to

Danny VK6FDRW), installation of replacement radio and controller equipment, and the installation of an air conditioning unit (thanks to Alek VK6AP). We also established IRLP node to link our 70 cm repeater to the IRLP network.

In August, the club participated in the 2012 ILLW weekend, operating a portable station at the Casuarina Lighthouse in Bunbury. Between Friday night and Sunday afternoon, the club station VK6BRC made some 68 contacts, including 28 with confirmed Lighthouse stations. All contacts were made using 10 watts delivered into a home brew squid pole (thanks to Neil VK6FNKS). The squid pole was only mounted on the security fence. Thanks to Danny VK6FDRW, Richard VK6FSDU, Doug VK6DEW and Brian VK6HBS for their enthusiasm, operating skills, and hard work setting up and packing away the club station!

The Bunbury Port Authority, who is responsible for Casuarina Lighthouse, was also very happy with our activation of the lighthouse for ILLW. For 2013, the Port Authority is looking at joining the BRC during the ILLW, and arranging an open day for the public at the lighthouse. This event is expected to be a highlight of 2013 for the BRC and planning for the weekend has already begun! 73 from Brian VK6TGQ - *vk6tgq@gmail.com*

Thanks Brian I'm glad the BRC has sprung back to life recently, it was always an active group in the past.

From the south to the north, and the Pilbarra Group.

In the Pilbara, the Amateur Radio Society of North West Australia has been busy the last few months. Jono VK6DF and Steve VK6HV have been working hard on setting up the Wickham/Karratha two metre repeater VK6RWR as well as Tom Price VK6RTP with EchoLink. The last few months the systems have been under test and December 2nd saw the installation of the equipment at Tom Price. This was a big milestone as for quite some time this project has been on paper and finally it has been constructed, tested and installed and works quite well. While Jono was in Tom Price he also spent some time carrying out some maintenance on the repeater to rectify some poor coverage reports. It was found that a faulty coax connector was the culprit and has since been repaired and coverage has greatly improved. The Tom Price EchoLink system consists of a small Acer 178 mm laptop, iLinkboards interface unit, Billion 3G router and Telstra Next G modem connected directly to the Spectra MX800 repeater. The Wickham/Karratha side uses a Toshiba 178 mm laptop, iLinksboard interface and a Simoco SRM 9000 VHF trigger radio to access the repeater. Jono has also configured the system to auto connect both sides together giving almost 350 km of coverage and gives the Tom Price users access to the already established IRLP node on the Wickham repeater.

November saw the relocation of the IRLP node 6600 from Mike VK6BHY to Jono VK6DF's QTH. Mike has been the custodian of the IRLP node for many years now and we would like to thank him for his work keeping it going during this time. There is more planned work for the north west. The VK6REX two metre repeater in Exmouth is going to be getting an upgrade of equipment and also plans of running IRLP and Echolink through a UHF Link to the Wickham repeater instead of two metre trigger base radios are under way. With the mining and resources boom still powering on strong we are dedicated to keeping these services in order and encourage anyone who works in the region to bring a radio and try out our little network.

Thanks Jono for the update. Last time I was in Tom Price I called and called but no luck, mind you it was the middle of the day and everyone was at work, and it was before all the linking took place, how much better it is now! Well done!

Next in line is Onno VK6FLAB with 'F Troop' news.

F-troop is an F-call friendly net. F-troop is a weekly amateur radio net for new and returning hams. We finished the year with edition 81. Since starting we've had contacts with 140 different stations with 580 QSOs. F-troop runs for an hour every week and we spend the time talking about amateur radio, welcoming new amateurs on-air and encouraging experimentation and conversation about building antennas, buying radios and the odd story about rare DX that a station might have scored. There's room for experimentation and different people host the net from time-to-time. You might find it's a great place to try out your new callsign; many have. Of course, we're not exclusively here for F-calls, that would be pretty boring if we only had people with questions, so if you've been around the block a little while, please don't hesitate to share your knowledge.

Thanks to Ronald VK6XS (formerly VK6FRSK) and Tony VK3JED, F-troop is available on both EchoLink and IRLP. You can participate in F-troop every Saturday morning from 0000-0100 UTC (0800-0900 WST) using the *VK3JED* EchoLink conference or via IRLP node 9558. To participate with EchoLink, install the software on your computer, create an account and send a copy of your licence to EchoLink so your callsign can be validated - see *echolink.org* for details. If you have a repeater nearby with IRLP, you can use DTMF tones to dial up 9558 and connect. Use DTMF 73 to disconnect.

Look forward to hearing you on the net next Saturday! - Onno VK6FLAB.

After reading the Bunbury RC news it seems there are many 'F' calls in the southwest, hopefully they can all join in the F troop net. Thanks Onno.

Wayne VK6EH has the latest from the NCRG.

Hi again from NCRG. There has been lots of antenna building activity at NCRG of late, the 80 metre four square antenna is progressing nicely under the guidance of Arthur VK6CY, with the first vertical radiator now in place and testing and tuning in progress.

Recently Steve VK6IR got up early and used this vertical (1 of 4) to work several UK stations on 80 metres CW as a simple groundplane. Very encouraging!

Meanwhile the 18 metre tower we obtained from the estate of Don VK6HK is all but finished, the TET Emtron 6 element 10 metre monobander is now in place and work is underway in servicing and generally making ready our 2 metre and 70 cm long Yagis ready for mounting above the 10 metre antenna. The rotator used is the one Don had installed when at his home, a Create machine, and now one of two at NCRG.

In an earlier publication of VK6 News I incorrectly reported that the tower was built by Don but in reality it was built in 1973 by Bob VK6KRC. Bob told me that the tower was one of only three built at that time. It had 11 metre sections and posed a problem when trying to fit the then 7.6 metre galvanizing baths. A first class job Bob.

The photo shows the tower now in its new home thanks to new members Eric VK6FEDS and Larry, VK6NOL.

Photo 2: The tower in place at the NCRG, with the six element 10 metre monobander mounted and ready for action.

Thanks and Happy New Year - Wayne VK6EH.

Finally, a note from your scribe. Remember the WIA Annual Conference will be held in Fremantle this year - what are you going to do to help? Contact Bob VK6POP or Onno VK6FLAB if you intend to get involved.

Once again, a very Happy New Year to all VK6 amateurs and their families.

73 Keith VK6RK.

Over to you

Your amateur licence fees

Sir,

Just recently I have received my licence renewal notice for the yearly amount of $72. I wish to make several comments about this matter.

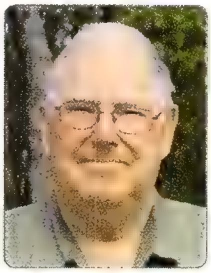
Over thirty years ago I was issued my European amateur radio licence for a small fee. This licence has no expiry date, is still valid and I certainly use it when I stay in Europe.

In European countries amateur radio is considered as a hobby of significance to all citizens and consequently there is no cost to all amateur radio licence holders.

I feel that the new Board of Directors need to look into this matter as an increasing number of amateurs will not renew their licences due to ever increasing licence costs and no consideration to the Amateur Radio Service in this country by the federal government.

(Mr) W. "Tom" Tomczyk

Amateur radio station VK2OE



VK2 news

Tim Mills VK2ZTM

e *vk2ztm@wia.org.au*

From VK2 may we wish readers all the best for 2013. ARNSW wishes to advise that their AGM will be held at the VK2WI site on Saturday, 20th April 2013. There is a call for nominations for the committee with the close at noon on Saturday, 9th March 2013 at the ARNSW office in Dural.

There are some changes with ARNSW this year. The bi-monthly Foundation course has been changed to a weekend with the assessments on the Sunday afternoon. Also, assessments for all license grades will be held on the Sunday morning of the course weekend. Assessments will no longer be held during the bi-monthly Trash & Treasure. ARNSW will be conducting assessments at the Wyong field day on Sunday 24th February. The next Foundation weekend is 23rd and 24th March. In future pre-registration for all courses and assessments is required and this may be done by an email to *education@arnsw.org.au* or a telephone call to 02 9651 1490 and leave a message with contact details. The annual upgrade course on a Monday evening will commence in March. We ask readers to pass these details on to anyone within range of VK2WI who would like to undertake courses or assessments. The bi-monthly Trash & Treasure is held on the last Sunday of the odd numbered month. The March event will be on the 31st.

This month several clubs have their first meetings for the year. This includes the Hunter Radio Group on Friday, 8th, and HADARC on the 12th and 26th. Waverley ARS have a Foundation weekend scheduled on the 9th and 10th. St. George ARS on Wednesday, 6th. The Central Coast annual field day at the Wyong Racecourse is on Sunday, 24h February.

The Illawarra ARS late last year moved their meeting venue from the Figtree Bowling Club as the Wednesday night cheap meal there attracted so many bowling members that they lost their meeting space. The new venue is the Coniston Community Hall in Bridge Street, Coniston. The meeting also reverted to the former meeting date of the second Tuesday evening. The Oxley Region ARC produces an annual calendar with passport sized photos of members. With a growing membership the 2013 issue has 68 head and shoulders portraits. The Oxley Region club meets on the first Saturday afternoon and third Friday evening at the SES in Central Road, Port Macquarie. Their annual field day is on the long weekend in June.

A new group has been formed in the Central West of VK2 and is based round Orange. It is the Amateur Radio Central West Group. Postal address is Box 8542, Orange. NSW. 2800. Email *arcwg@hotmail.com.au* Active in contests and training they have the callsigns VK2ACW and VK2RCW with WIA affiliation. A net is held on Wednesday at 2000 hours, on 3650 kHz. President Les VK2SON, Secretary John VK2EJM and Treasurer Ross VK2ER.

WICEN NSW in December commissioned a new repeater at Chatswood, replacing the former system that has been out of service for a few years. On the original channel of 147.150 MHz with a +600 kHz offset. Requires a 91.5 Hz tone for access, also has a 91.5 Hz tone on the output. Power is 40 watts. The new callsign is VK2RWC. There is a new 23 cm repeater now operational at the same site, on 1273.200 MHz with 30 watts output. No tone on input but 91.5 Hz on the output. The site is shared with HADARC and they will commission a 70 cm system on 438.350 MHz VK2RHT with a non-standard offset of -5.4 MHz. Stephen VK2BOS has been conducting tests with fldigi software on Monday evenings, 3550 kHz at 2000 hours. Consideration is being given to also using 40 metres.

The close of analogue television along the VK2 east coast from Newcastle to the Queensland border took off the beacon like service from Channel 5A in Newcastle. The only operational two metre beacon currently in VK2 is VK2RSY 144.420 MHz at Dural. Perhaps a few new beacons developed round VK2 would help: could be a good club project. How up to date are your club and repeater details in the annual WIA Callbook? Have a look at the 2013 edition and advise any corrections to the WIA departments who look after the entries.

Ross VK2ER who conducts for ARNSW the VK2BWI Morse session on 80 metres 3550 kHz on Thursdays at 2000 hours reports an upsurge in interest and callbacks, many of which are in CW. For those unable to call in you can email *vk2bwi@arnsw.org.au* and these will reach Ross. Ross would like some help with the session and you can contact him in the callbacks or at the above email.

The Sydney-based Hellenic

ateur Radio Association of stralia conducted a successful pedition as ZL9HR to Campbell and late last year, advises Ed K2JI, their Publicity Officer. If you ant to find more check the web e *www.zl9hr.com*

There were several inquiries r the AWA HF transmitter from K2WI late last year. After a ballot has found a new home in the country outside Queanbeyan. Tests were conducted early January with digital voice on 40 metres by Ed VK2JI using the VK2WI broadcast as a signal source. More details at *freedv.org*

ARNSW last year made available a name badge to the members and by years end about 50% had taken up the offer. The offer continues to be available and applications should be made to the Secretary at Box 6044, Dural Delivery Centre, NSW. 2158. Membership of ARNSW is available at $10 per annum for either two or five years. You can download an application form from the ARNSW web site at *www.arnsw.org.au* 73 - Tim VK2ZTM.

Silent Key

John Cox VK6NJ

Many amateur radio operators will be saddened to hear of the passing of John Cox VK6NJ, who left us on All Saints' Day 2012, 1st November.

Born on 30 January, 1928 John had an enviable, rich and varied career. John's experience with education, which later was to become his forte, began with his first schooling at Bunbury in WA; John's father was employed with the railways and John, in tough times, left school at 15 and joined his dad within that organization. This experience transported him to diverse locations within WA, such as Amery, north east of Dowerin, along with other remote areas.

Twelve years 'down the track' a yearning to become an educator led John to gaining entry in to Graylands Teachers' College. Having earlier married Nancy, a teacher herself, he gained strength from Nancy's support, resulting in graduation and the launching of a fine and accomplished career lasting some 35 years, and John, Nancy and children found themselves in many colourful and diverse locations. A respected and loved Headmaster, John studied externally to achieve his Master's degree. This led to his promotion becoming a much accomplished Superintendent of education with appointments at Welshpool and Merriden district offices and culminating in the head office at Perth.

Amateur radio became a strong passion of John's, gaining his 'full' Amateur Operator's Certificate of Proficiency in March, 1962. His illustrious activities in this pursuit began in Yornup. They talk now of' 'social media', however John's version of this, may I suggest, was far more filling and rewarding than its modern counterpart. Mind you, I believe Nancy's tolerance of the incessant sounds of the delightful Morse code took a power of beating!

During John's lengthy period in amateur radio, he became happily involved in educating readers of the periodical AR with articles such as 'The Historical development of Radio Communication' published from December, 1964 over several months and resulting from his thesis of the same name. In 2005 a further publication elevated John in his establishment as a fine and literate communicator: a documentation concerning the establishment of what became known as 'The Bernie gates Shavers net', an amusing and once again most informative narrative.

My memories of John are rich indeed and of unqualified value. A man who could move you to tears as he often did himself, with his infectious and truly wonderful depth of emotion and knowledge, over so many subjects.

I treasure, as many do, his memory and feel totally privileged to call him a friend.

Contributed by Kerry Cook (ex VK6CA).

Silent Key

Thomas Reginald (Reg) Stockman VK2ATS

Reg Stockman VK2ATS passed away on 7 October, 2012 after suffering a stroke, while in hospital with pneumonia.

Reg was born on 2 February, 1928 in Blandford, NSW. His family moved to Inverell in 1935 and he lived there for the rest of his life.

He had an interest in radio from a young age and used to make crystal sets in his parents' shed.

After leaving school he worked for an electrical firm as a radio serviceman. In 1960 he began a business with a partner, called Stockman and Higgins. It was an electrical store which sold and serviced radios, televisions, white goods and sound equipment. Reg ran the service department until the partnership ended in 1984. He then began trading as Reg Stockman Communications, selling and servicing two way radios, until he retired in 2000.

Reg had a life-long passion for amateur radio, which gave him pleasure until poor health required him to move to high level care only nine months before his passing. In earlier days he built all of his radios and equipment and he spent many hours talking to people all over the world.

Most family holidays were spent on the Gold Coast catching up with many amateur radio enthusiasts and their families, who became firm friends of Reg and his wife Noeline (who had passed away in 1997) right up until Reg passed away. He also spent many Easters at the Urunga Ham Festival, catching up with his radio friends.

In 2010 he received a certificate congratulating him on 61 years membership with Amateur Radio NSW, of which he was very proud.

Reg was a special man – always a gentleman who was held in high esteem and respected by all who knew him in the amateur radio world.

Contributed by Janis Moore (nee Stockman).

VK3news

Tony Collis VK3JGC

Geelong Amateur Radio Club - The GARC

During the summer holiday period the influx of visitors to the coastal areas of southern Victoria is measured in the thousands, amongst which are both upstate VK3 and interstate amateurs, so the following is an *aid memoir* for those wishing to use the available GARC repeaters on both 2 m and 70 cm, with the added facility of P25 and IRLP for both interstate and global communication.

Photo 1: Ken VK3NW at the original repeater cabinet during the changeover to MTR 2000 repeaters.

2 metre band

- Repeater VK3RGL 147.000 MHz with 91.5 Hz CTCSS
- Repeater VK3RGC 147.125 MHz with 91.5 Hz CTCSS
- Repeater VK3ROW 147.275 MHz with 91.5 Hz CTCSS

70 cm band

- Repeater VK3RGL 439.500 MHz with 91.5 Hz CTCSS
- Repeater VK3RGC 439.575 MHz with 91.5 Hz CTCSS (and APCO P25)

IRLP

- VK3ATL node 6572 can be accessed via the VK3RGC 2 metre repeater

2 metre and 70 cm beacons

- Beacon VK3RGL 144.530 MHz in QF22DC beaming W and NE
- Beacon VK3RGL 432.530 MHz in QF22DC beaming alternately W and NE

P25 operation

P25 operators please use a NAC of 293 and ensure your radio ASTRO ID matches your ACMA Client ID. Additionally, because VK3RGC is a mixed mode repeater we recommend you set your VK3RGC personality for mixed-mode receive. The maintenance of the above is carried out by Ken VK3NW, Peter VK3WK and Nik VK3BA with coverage maps by Bert VK3TU. Please see *www.vk3atl.org* Repeaters and Beacons for any updates.

The story of the trials and tribulations of the GARC VK3RGC repeater - by Ken VK3NW

There has been a long history about the Geelong second string repeaters that are not well known. The VK3RGC repeater has been on site for about 20 years and had a fractured life until now. Located at the Montpellier water storage facility overlooking Geelong it started out as a Phillips FM828 in a traffic light cabinet with separate transmit and receive antennas on a wooden telegraph pole. When the long drought came the ground contracted and the pole was moving in the breeze. The Water Board said it had to go and the pole was cut down. After some time off the air we were able to locate a new antenna on a tower with the ambulance service but we needed a diplexer. The GARC were given an old home built unit which was not very successful. So we rebuilt it and had the whole thing silver plated and the top re-machined, and replaced the links and loops. When the job was completed, which

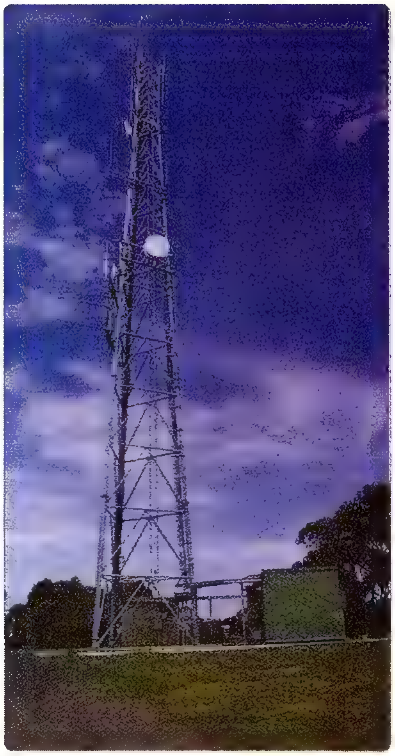


Photo 2: The tower supporting the repeaters.

Photo 3: VK3RGC VHF and UHF repeaters in the new accommodation hut.

took several months and a lot of dollars, the diplexer was as good as any commercial unit costing three times as much as we spent.

So back on the hill the installation was completed, but we had a problem! There was a very weak signal being generated on site on the input frequency but a 10 db attenuator on the receive line fixed the problem which was coming from one of the cables to the main 40 metre tower where the TV translator was located. About that time a supply of Motorola VHF repeaters became available and our three sites were converted and also a CTCSS of 91.5 Hz was applied for access, which reduced many of the problems at each site, VK3RGC, VK4RGL and VK3ROW.

Again, more drama! The main 40 metre tower was condemned and the Water Board wanted the site cleaned up, so our shared tower was to go. However Amateur Radio Victoria was able to negotiate and arrange antennas on the new tower and space in a building for our gear. We had to close down for a while as the work progressed and when the site was available it was back to the hill again. Now we had new antennas on a larger tower and 70 cm antennas as well. One of our club members saved a Motorola high power repeater from going to the tip. We supplied a rack cabinet for the equipment and the VHF and UHF equipment was installed and commissioned in 2011.

As identified above, in Geelong we now have 147.125 VHF and 439.575 UHF and P25 repeaters that give excellent coverage in the local area especially on hand held radios. Remember the 91.5 CTCSS which is on transmit as well. Also we have IRLP on our 147.125 VHF frequency and because of the equipment the ident is masked when you are using the node. The main lesson to be learnt when dealing with repeaters is patience, and to be professional in your dealings with the site owner.

Silent Key

Albert Edward (Ted) Peppercorn VK1AEP

Ted was born in Forbes NSW on 22 August, 1918 and was associated with the radio and electronics industry for most of his life. Prior to WW2 he worked in radio receiver design and production with a brief excursion into the broadcasting field.

In 1940 he joined the RAAF (Signals) with his service alternating between instructional duties at home and service in New Guinea and the islands and was mentioned in despatches as a result of his service there. Upon discharge in 1946 with the rank of Flying Officer, he joined Qantas Empire Airways as a Flight Radio Officer.

From 1950 onwards he was employed at the Weapons Research Establishment, SA, specialising in the application of the new transistor technology. He later left SA and moved to WA where he worked for the ABC on the OB crew.

He moved to Canberra in 1964 and worked at the Orroral Valley Tracking Station. His last job was at the Research School of Chemistry, ANU, before retiring as Senior Technical Officer.

Ted was a keen radio amateur for many years and was an Associate Member of the Institution of Radio and Electronics Engineers Australia.

Ted passed away peacefully surrounded by his family at John Flynn House in Canberra, which was his home for the last three years of his life, on 24 June, 2012.

He is survived by three children, five grandchildren and one great grandchild.

Contributed by children John, Tony and Pam.

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Hamads

WANTED – NATIONAL

The WIA Archive continues to seek copies of early Australian radio magazines containing aspects of our history and in particular those which were associated with the Institute.

Radio Experimenter, **Experimental Radio & Broadcast News** and **Radio Broadcast** were monthly magazines produced during the mid 1920s.

H.K. Love and Ross Hull were responsible for their production, initially from Melbourne, but moved to Sydney in October 1925.

Please contact Peter VK3RV via email *vk3rv@wia.org.au* or c/o the National Office in Bayswater if you can help us locate copies of the above magazines.

FOR SALE – VIC

Yaesu FT-897D, S/N 8M060197. Has hardly been used. In excellent condition with original packaging, manual, and microphone. A Collins SSB filter is fitted. Also included, an external LDG 63.5 mm (2½ inch) S/PO/SWR meter, CAT interface cable and ADMS program. $1300 plus postage.

Contact John VK3FGY, phone 02 60242859 or at *johnferg@bigpond.com*

WANTED - VIC

A circuit drawing for Yaesu FT-7 please. I will pay any costs involved.

Contact Laurie VK3BV or email to *shirlau@netbay.com.au* Phone is 03 5975 0306.

Kenwood KP 202 two metre FM HH - owner's manual or handbook and service manual, or copies.

Alinco ELH 230E linear amplifier – relay.

Call Brewster VK3YBW on 03 9527 2661 after 6 pm – if no answer please leave a message.

FOR SALE – NSW

Amateur radio gear:

MDS Down Converter, $5

Hills Telomast, 12.2 metres (40') in four extendable sections, $50

Satellite Receivers:

Humax IRCI 5400, $50

UEC DSD660, $50

Nokia 9500S with DVB2000 software, $50

Xanadu DSR, $15

Winersat WR920 analogue receiver (dish and Polarator feed controller), $10

Other Satellite parts:

Chaparral C-Band Polarator feed with Norsat Gold 15K C-Band LNB, $45

Chaparral CoRotor II C/Ku feed fitted with Norsat Gold 15K C-Band LNB and Gardiner 0.7 dB Ku LNB, $80

Chaparral Model C Ku LNB, 9.75/10.75GHz LOs, $10

ACESAT Twin Ku LNBFs, $20 each

California Amp Ku LNBF, $10

Sharp Ku LNBFs, $15 each

DX Antenna DSA527N Ku LNBF, $5

DX Antenna DSA527D Ku LNBFs, $5 each

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Zinwell SAB-09C Coax Relays, $10

4 x Irdeto CAMs, not CI, various age and S/W, $5 each

Other miscellaneous parts, feeds, Pc inserters, DiSEQc switches, negotiab

Other:

Laser disc player, analogue, Pioneer L V4300D, free

Contact Roger Woodward VK2WW at *VK2WW@hotmail.com* or phone 02 9546 1927.

WANTED - NSW

I am looking for a Collins AM/CW transmitter such as the 32V-1, 2 or 3. I would prefer in operational condition, or at least complete. Please advise condition, location (this is no lightweight!) and price. Photos would be most appreciated.

Contact Steve Beveridge VK2LW by email *steve.b@internode.on.net* or mobile 04 1219 4513.

Schematic for Standard SR-F21 radio made in Japan in 1957.

Contact Seppo Ahlstedt VK2SMA on *ahlstedt@acslink.net.au* or mobile 04 2524 1973.

FOR SALE - QLD

CW TOUCHKEYER, touch paddle keyer, model P1K. Fully assembled and working, never used, perfect condition $20.00.

Contact Rod Rush VK4RA, QTHR on 0409 141 140.

30 metres of eight core rotator cable. Used but in good condition. Genuine rotator cable.

Reply to Mervyn VK4DV, phone 07 4928 5537 nights, QTHR.

WANTED - SA

Yaesu FT-77 manual. I will reimburse postage and copying expenses. If not a digital copy I would like to borrow for scanning. I have tried several websites and only the User Manual and schematics have been located.

Contact Bruce VK5HN, QTHR 08 86425930.

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Your contribution and feedback is welcomed.

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Email the Editor:
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**Denotes nominated by the WIA Board ("Nominated Member")*

Special Event Station K5B: Bataan Memorial Death March Marathon

The **Mesilla Valley Radio Club (MVRC)** of Las Cruces, New Mexico will be operating Special Event Station K5B on 17 March, 2013. This operation is in conjunction with the 24th annual Bataan Memorial Death March Marathon event to be held at the near by White Sands Missile Range. More information about the event is available at http://www.bataanmarch.com/

K5B will operate from 1000Z to 2300Z on or near 21.337, 14.330, 7.225, and 3.893 MHz.

Most of the activity will likely be on twenty metres.

A commemorative QSL card will be available by request. Please QSL with a self addressed stamped business sized envelope to Special Events Station K5B in care of the Mesilla Valley Radio Club, P. O. Box 1443, Las Cruces, NM 88004 1443, USA. All QSL requests must be received by Friday 26 April. DX stations can send IRCs or their QSL can be sent back to them via the ARRL incoming QSL bureau. Please allow four to six weeks after the deadline for delivery.

More information about K5B is on the MVRC Web site at *www.n5bl.org/bataan/*

2013 WIA CONFERENCE

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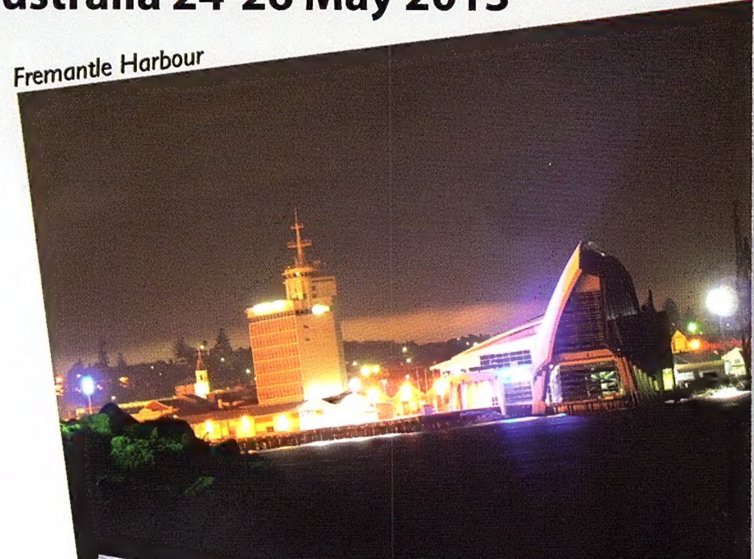
Fremantle Harbour



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Margaret River (Image: Vasse Felix)

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